New Philadelphia Archaeology, 2008

(Last updated: Dec. 20, 2008)

Excerpt from Atlas Map of Pike County (Ensign 1872)

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Organizations participating in this research include:

University of Illinois, Urbana-Champaign and Springfield
Illinois State Museum
DePaul University
Northwestern State University
University of Mississippi
University of Maryland
New Philadelphia Association
Time Team America

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Chapter 1
Introduction

(Last updated: Jan. 4, 2009)

New Philadelphia, Illinois, is nationally significant as the first town in the United States planned in advance and legally founded by an African American. Frank McWorter founded the town in 1836, and it grew as a multi-racial community through the nineteenth century. The town was planned and platted in a grid pattern with 42 acres of space, divided into 20 blocks, 144 lots, alleyways, and several streets. The community population reached a peak of approximately 160 people, 29 households, and merchant and crafts operations as listed in the 1865 federal census. New Philadelphia was bypassed by a new railroad in 1869 and the population declined steadily thereafter. By 1885, the status of the community as a town was eliminated and large tracts of the land were put into agricultural use. Today, no structures from the town remain above ground, and the town site is covered by prairie grasses and agricultural fields.

Archaeological and historical studies of New Philadelphia were undertaken in the period of 2002-2006, with support in 2004-2006 provided in part by a grant from the National Science Foundation's Research Experiences for Undergraduates (NSF-REU) program (Grant No. 0353550). Archaeological and historical studies based on work conducted in 2002-2006 have been reported in previous publications, including those presented on two inter-linked public history web sites maintained by the University of Maryland (http://heritage.umd.edu/) and the University of Illinois (http://www.anthro.uiuc.edu/faculty/cfennell/NP/). Background information and studies concerning the history of New Philadelphia, its founder, and the regional contexts in which the community existed, are available in those earlier publications, and are not repeated here. Our 2006 archaeology report (Shackel et al. 2006) provides a cumulative overview of research work and results up through that publication date. Historical studies and accounts of Frank McWorter and New Philadelphia include those of Ensign (1872), Chapman (1880), Grimshaw (1876), Matteson (1964), Simpson (1981), Walker (1983, 1985), and Burdick (1992). This 2008 report is intended primarily to provide a concise overview of developments and research results in the period of 2006-2008.

2004-2007 Program Results and related Developments

Some overall observations can be made concerning the results of our archaeological and historical research in 2004-2006 (Shackel et al. 2006). Archaeological work through the end of the 2006 field season uncovered over 65,000 artifacts, faunal and floral remains, and the locations of twelve house and business structures, including a grocery and a blacksmith operation. There appears to have been no racial segregation of property locations within the town. The locations of residences and businesses of African Americans and European Americans were spatially interspersed in the town during the nineteenth century. We uncovered no archaeological evidence of violent destruction of properties within the town, even though the community was located within a region sharply impacted by racial strife. Most structures and occupation sites appear to have been concentrated in the landscape covered by the north-central portion of the town plan. Archaeology revealed early house sites not indicated in historic-period documents, such as deeds, tax ledgers, and census records. Community members in the nineteenth century likely utilized a mix of architectural styles and building methods, including

frame, log, wood post, stone, and brick construction. Residents enjoyed access to local, regional, and international commodities from the outset of settlement of the town. Ceramic housewares were similar in style, expense levels, and types of assemblages across house sites of both African Americans and European Americans. There may have been some variations in dietary and culinary practices based on the region of origin or ethnic background of particular families who moved to New Philadelphia (Shackel et al. 2006).

Based upon the success of the archaeological investigations in earlier years, the archaeology project succeeded in placing the town site of New Philadelphia on the National Register of Historic Places in 2005. Project efforts now include continuing work towards nominating the New Philadelphia town site for National Landmark status, an effort headed up by Ms. Charlotte King and Prof. Paul Shackel, Director for the Center of Heritage Studies at the University of Maryland. While over 80,000 properties in the United States have been listed on the National Register of Historic Places, fewer than 2,500 have received this higher distinction as a National Historic Landmark. A hearing was convened on October 29, 2008, by the National Historic Landmarks Committee, which voted unanimously to approve this nomination. Patricia McWorter presented an eloquent and moving statement on behalf of the McWorter family at that hearing on the powerful legacies of New Philadelphia and Frank McWorter. This nomination received official support from U.S. Senators Barak Obama and Richard Durbin; U.S. Representatives Ray LaHood and John Shimkus; Illinois Senators Deanna Demuzio, Emil Jones, Jr., and John Sullivan; and Illinois Representative Jil Tracy, among others. Upon final approval by the Secretary of the Interior, the New Philadelphia town site will be formally designated as a *National Historic Landmark.* Ms. King, a graduate student at the University of Maryland, has also authored an excellent lesson plan based on the history of New Philadelphia as part of the National Park Service's *Teaching with Historic Places* program (http://www.nps.gov/history/nr/twhp/).

The 2004-2006 NSF-REU field schools at New Philadelphia were also very successful as educational programs. Our recruitment efforts were very effective in addressing a primary goal of the NSF's REU program by attracting the participation of students of diverse heritage backgrounds and students from small colleges and historically black universities and colleges. Applications in the 2004-2006 period came from students at dozens of such colleges, and our enrolled students included numerous individuals of African-American, Native-American, Asian-American, Latin-American, and European-American heritage. Our enrolled students came from historically black colleges and universities (e.g., Tuskegee University and Lane College), small local schools (e.g., Quincy University and Hannibal-LaGrange College), and liberal arts colleges, at which such scientific research opportunities were not otherwise available. We received 30 to 50 applications for each summer's field school from students across the nation. Our enrolled undergraduate students came from colleges and residences in Alabama, Arkansas, California, Florida, Illinois, Indiana, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, New York, Ohio, Puerto Rico, South Carolina, Tennessee, and Texas.

Each of the 27 students who participated in our programs in 2004-2006 benefited greatly from the training and education they received. A few examples will illustrate such student successes. A student of African-American heritage from Tuskegee University concentrated her studies on African-American history, and followed up her work at New Philadelphia by applying

to graduate programs in history. With the training she received in the NSF-REU program, and a supporting letter of reference from one of our co-principal archaeologists, she was admitted to Ohio State University's graduate program. As a result of participating in our field school in 2004, a second student shifted her undergraduate focus to archaeology, and is now a graduate student with a focus on historical archaeology. A third student, of African-American heritage, has similarly benefitted from our field school experience and training and is now enrolled in a graduate school program in anthropology, with a focus on African diaspora subjects. A number of our students also co-authored papers on New Philadelphia that have been presented at professional archaeological conferences.

We have promptly published reports and underlying data obtained in the 2004-2006 program to a broad and diverse array of interested stakeholders and audiences, including professionals and students in archaeology, history, and African-American studies, descendant community members, and local community members. We have published these reports and extensive archaeological, geophysical, and documentary data sets through our public archaeology web sites. These publications and diverse data sets on our internet sites are being used by college instructors as undergraduate lesson plans for research methods in history, archaeology, and African-American studies. We have created these extensive internet resources for the use of other researchers, stakeholders, and broad public audiences in a way that significantly contributes to the available "cyberinfrastructure" of interdisciplinary research, a goal also strongly promoted by the NSF-REU program.

Our earlier published reports and data compilations include: 2004 Archaeology Report; 2005 Archaeology Report; 2006 Archaeology Report; 2004-2006 Geophysics Survey Report; 2005 Shovel Test Survey Report; 2002-2003 Field Walkover Survey Report; Hadley Township Census Data; New Philadelphia Census Data; Deed Records of New Philadelphia; Report of Newspaper Archival Transcriptions; Report of Oral History Transcriptions; Hadley Township Tax Assessments for New Philadelphia; New Philadelphia National Register Nomination; and Maps, Surveys and Plats related to New Philadelphia. Members of our project have also published articles about archaeological investigations at New Philadelphia in the following publications (among others): *Illinois Antiquity*; the *Society for American Archaeology Record*; *Living Museum*; *Outdoors Illinois*; the *Society for Historical Archaeology Newsletter*; and the *African Diaspora Archaeology Newsletter*. In addition, the results of the New Philadelphia project have been presented through papers and posters at a number of professional archaeological conferences, including those of the Society for American Archaeology, Society for Historical Archaeology, Midwest Archaeological Conference, and Illinois Archaeological Survey. A number of those papers were co-authored by undergraduate students who participated in the NSF-REU field schools, including studies entitled "Archaeozoology at New Philadelphia" and "Ethnic Identities and Consumption Patterns: A Minimum Vessel Count Analysis at New Philadelphia."

We are also preparing to publish a collection of articles about this long-term research project in a specially edited issue of a peer-review journal and are at work on other articles and books. Our findings and interpretations to date are scheduled to be published in an official monograph series reviewed and published by the Illinois State Museum (ISM). This publication series, entitled the *Illinois State Museum Reports of Investigations*, utilizes ISM and external

peer reviewers, and has previously published studies by distinguished scientists such as Patty Jo Watson, Melvin Fowler, Jane Buikstra, and George Milner. In addition, we have a specially edited, thematic issue of articles on New Philadelphia accepted for publication in *Historical Archaeology*, the peer-reviewed journal of the Society for Historical Archaeology.

With support from the University of Illinois' Research Board, Ms. Nanguo Yuan, a professional landscape architect educated in Beijing, China, and a graduate student at the University of Illinois, worked in 2007 to consolidate data sets useful for landscape and archaeological analysis of the New Philadelphia town site and related cultural features in the area. She standardized and consolidated data from Global Positioning Satellite (GPS) topographic surveys, extensive laser transit measurements, and a variety of ground-based archaeological and geophysical surveys into a Geographic Information System (GIS) database platform. Ms. Yuan also worked with members of the local and descendant communities of New Philadelphia to create visual renderings of potential approaches to preserving and presenting the town site to public audiences in the future.

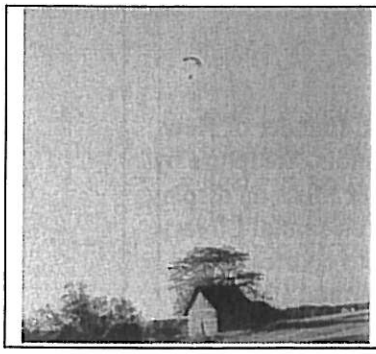
While our targeted surveying and excavation methods proved highly successful in our work up through 2006, we had only excavated approximately 2,300 square feet of the town surface at New Philadelphia, which represents less than one percent of the town's spatial extent as planned in the 1836 plat. Challenging research questions concerning the impacts of ethnic, racial, and market dynamics on household development and the social and economic relationships among town residents can best be addressed with increasingly robust data sets. With ongoing support and research activities, we hope to compile larger data sets with which to address these research questions in the most complete manner we can, and also to further contribute to the overall success of the NSF-REU program.

2007-2008 Aerial Thermal Survey Project

Federal and state census records, tax records, and deeds provide extensive data about the residents of New Philadelphia. However, such historical documents do not provide a specific spatial map of household and merchant locations. Archaeological survey and excavations can map those locations in much greater detail to provide a richer data set for the social history of this community. The 1836 plat provides a plan for the town, including a grid pattern of streets, alleys, and lots, but the question remains as to whether this design was followed as the town developed. Indeed, newspaper reports during the town's existence indicated that town residents did not adhere to planned property lines in their building activities. Archaeological excavations at the town site have also uncovered early structures for which documentary evidence from deeds and other historical records provided no indications.

A number of archaeological survey and prospection methods have been employed previously at the New Philadelphia town site by collaborating researchers. These survey methods have included a pedestrian survey and surface collection of a large portion of the town site. Dr. Michael Hargrave has conducted approximately 6.5 acres of surface-based geophysical surveys at the town site, utilizing electric resistivity and magnetic gradient sensors (Hargrave 2006). Due to the large size of New Philadelphia as platted (42 acres), it is not practical to attempt surface-based geophysical surveys of the entire town site.

In June, 2007, the National Park Service and National Center for Preservation Technology and Training awarded a grant to test the usefulness of low-altitude aerial surveys employing high resolution thermal imaging at New Philadelphia. We planned to employ this methodology at the town site for a new and specific purpose: determining whether this technology can detect the grid pattern of an historic town site buried beneath 1-2 feet of agricultural fields and prairie grasses. Prof. Tommy Hailey of Northwestern State University in Louisiana and Bryan Haley of the University of Mississippi have pioneered the techniques used in combination in this survey approach, collecting survey data utilizing a powered parachute ultralight aircraft and a high resolution thermal camera (Hailey 2005).



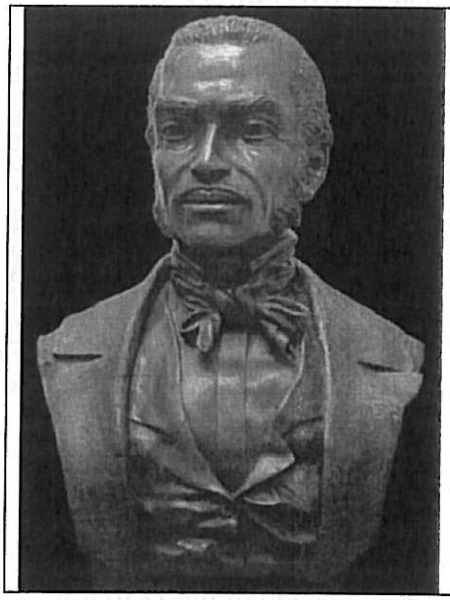
Low altitude aerial surveys at New Philadelphia by Tommy Hailey and Bryan Haley (left). Current landscape with overlay of platted town boundaries (right).

The initial data collection through this aerial survey was completed successfully at the town site in the week of May 12, 2008. The data sets from this aerial thermal survey are being geo-referenced and integrated using spatial mapping programs, such as Geographic Information Systems (GIS) software, and the creation of mosaic imaging representations. The survey results can then be examined in relation to a geo-referenced version of the 1836 town plan and other comparative data from archaeological investigations. The results of this aerial survey project will also be published in articles to be submitted to peer-reviewed journals. If successful, this technique will provide an extremely useful resource for applications on numerous similar sites throughout the nation. Portions of the resulting data were ground-tested at the site during the excavations phase of the ten-week field school in June, 2008. Preliminary results from the aerial survey have also identified thermal anomalies that appear to correspond with known locations of subsurface stone foundation remains. Researchers plan to further test thermal anomalies identified in this aerial survey through soil core sampling probes, targeted ground-based geophysical surveys, and excavations in future field seasons.

Overview of 2008 Research and Educational Activities

In early January, 2008, our collaborative group of researchers received funding from the NSF-REU program for another three years (2008-2010) of field school research at New Philadelphia (Grant No. 0752834). The archaeological and historical research work in the period of this grant will be co-directed by Anna Agbe-Davies (DePaul University), Terrance Martin (Illinois State Museum), and Christopher Fennell (U. Illinois). Our plan for these ongoing archaeological investigations at the town site is designed to further enhance our knowledge about the social dynamics of this remarkable community and its surroundings while conserving the site for future generations of visitors and researchers.

One month after news of the new grant, members of the McWorter family, other descendant family members, and members of the local community, gathered at the Lincoln Presidential Library on February 28, 2008, to commemorate African-American History Month. The group presented the Library with a bronze bust of Frank McWorter, sculpted by Shirley McWorter Moss, and a bound, eleven-volume set of archival papers and archaeology reports. Shirley McWorter Moss, Sandra McWorter, Allen Kirkpatrick, Kathryn Harris, Janet Davies, Anna Agbe-Davies, Terry Martin, and Chris Fennell spoke at the gathering.

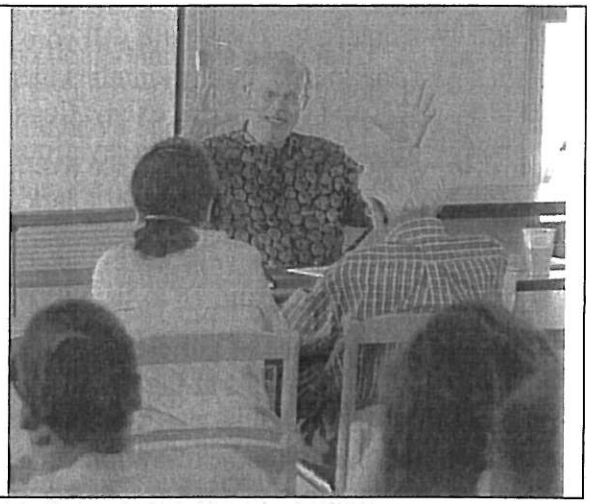


Frank McWorter, founder of New Philadelphia, Illinois. Sculpture by Shirley McWorter Moss on display at the Lincoln Presidential Library, Springfield (Photo courtesy of Sandra McWorter and Lincoln Presidential Library).

We also organized a series of public speakers and audience discussions on the subjects of *African-American Heritage in the Midwest* to be held in June and July of 2008. This program provided a forum for lectures and broad audience discussions of subjects concerning African-American history and struggles for freedom and equality in ongoing efforts to combat racism in American society. This forum contributed to a broad, collaborative project of archaeologists, historians, and members of the local and descendant communities to place such topics of African-American accomplishments in greater focus within our national memory and heritage. The series included talks by Profs. David Gradwohl (University of Iowa), Paul Shackel (University of Maryland), Abdul Alkalimat (Gerald McWorter) (University of Illinois, Urbana-Champaign), Timothy Baumann (Missouri Valley College), Paul Mullins (Indiana University-Purdue University Indianapolis), Flordeliz Bugarin (Howard University), and Kamau Kemayo (University of Illinois, Springfield). Convened in the period of June 3 through July 23, 2008, this program was sponsored by the New Philadelphia Association, Sprague's Kinderhook Lodge, and the Illinois State Museum, with the support of a grant from the Illinois Humanities Council, the National Endowment for the Humanities, and the Illinois General Assembly.

The educational components of our ten-week field school, convened from May 27 through August 1, 2008, also included discussions among the participants on issues of race and racism in American history and contemporary society. Following a presentation of related historical data by Chris Fennell, Anna Agbe-Davies, and Terry Martin, our field school students

Prof. Abdul Alkalimat (Gerald McWorter) is a direct descendant of Frank McWorter and is Professor, Department of African American Studies, at the University of Illinois, Urbana-Champaign. He presented a talk on July 10, 2008, entitled "African-American History and Struggles for Freedom: Conditions of Subject and Object" as part of a speaker series.



discussed and debated the contours and regional context of racism in which New Philadelphia existed, and how racial prejudices may have impacted the daily lives of town residents. Over a number of group meetings, we reviewed episodes of the PBS program entitled "African American Lives" and discussed issues of African-American heritage and the legacies of racism in the United States. Our discussions included debates concerning facets of the social construction of concepts of race, the deployment of racial ideologies against different target groups in American history, evolving concepts within biological science of physiological and genetic variations among populations, research purporting to identify DNA links between population locations over time, and arguments concerning the dangers of racial profiling in modern medical and pharmaceutical practices.

The overall plan for the research components of our ten-week field school in the summer of 2008 included new ground-based geophysical surveys in the first week, followed by four weeks of excavations and surveys at the town site, and a subsequent five weeks of laboratory research and analysis of the material, faunal, and floral remains at the Illinois State Museum's Research and Collections Center in Springfield. In April and May researchers had corresponded with Michael Hargrave to identify the areas of the town site on which he would conduct new surveys, using electric resistance and magnetic gradient detection methods, in the week of May 27. The Spring of 2008 was marked by higher than normal rainfalls, which provided very good conditions for conducting such geophysical surveys. In past years at New Philadelphia, low moisture content in the ground surface made the process of obtaining and interpreting such geophysical data very challenging. Among other results obtained in the week of May 27, Hargrave obtained vivid data in the area of Block 3, Lot 4, on the north edge of the town site, which was later explored by two of our excavation teams.

Correspondence and consultations among historians, archaeologists, geophysical specialists, and members of the local and descendant communities in April and May had resulted in a list of potential areas on which we might concentrate our excavation and survey efforts during the 2008 field school. These locations and potential efforts included:

a. Undertake systematic soil core sampling (with a one-inch diameter sampler) at the locations of new anomalies identified by geophysical surveys in the week of May 27, and commence excavations where warranted.
b. Expand survey and excavations in the area of Block 3, Lot 4, owned for a period of time by Alexander Clark and located near a lime slacking pit uncovered as Feature 2 in 2004 excavations.
c. Continue excavations in the area of Block 7, Lot 1, for which a newly discovered tax record from 1845 listed a higher value assessment that might indicate the presence of building at a time when Frank McWorter owned the parcel. Partial excavations at this location in 2004 uncovered Feature 3, the foundation of an 1870s house site, which may have overlain the remains of an earlier occupation.
d. Survey and excavations in the southern half of Block 8, Lots 1 and 2, for which a number of deed references indicate a school house for African American families may have been located in the 1850s and 1860s.
e. Excavations on previously identified geophysical anomalies A8, A9, and A36 in the area of King Street north of Block 8, and anomalies A37 and A38 in the space platted for Walnut Alley on the northern edge of Block 8, Lots 5 and 6.
f. Use a hammer-driven, soil core sampler (with two-inch diameter and up to six feet in sample length) to test thermal anomalies from the aerial survey and anomalies identified in ground-based geophysical surveys, or to explore the stratigraphic profiles of earthen terraces on the west side of the town site.
g. Continue excavations of the site of a blacksmith shop located in the area of Block 3, Lots 1 and 2, on which partial excavations were undertaken in 2006.
h. Undertake geophysical surveys, and subsequent excavations, in the area of Block 12, Lots 1-4, in which a shovel test pit survey in 2005 uncovered indications of potential occupation remains.
i. Continue excavations of the site of Louisa McWorter's house on Block 13, Lots 3 and 4, on which partial excavations were undertaken in 2005.

Of these options, field work in May and June of 2008 focused on tasks (a)-(f), undertaken by the NSF-REU field school participants and by a collaborating archaeology team associated with the "Time Team America" documentary program. We did not pursue project (g) with additional excavations in the area of the blacksmith shop on Block 3, because that location was at the base of a shallow slope and so water-sodden from recent rains that it would have been difficult to undertake carefully controlled excavation work. We chose not to pursue effort (h) on Block 12, or task (i) with further excavations of the site of Louisa McWorter's house on Block 13, because our excavation teams were fully occupied at other locations on the town site during the field season.

Our field teams consisted of co-managers Anna Agbe-Davies (DePaul University), Terry Martin (Illinois State Museum), and Chris Fennell (University of Illinois). Kati Fay, a graduate student at the University of Illinois, served as our Archaeology Laboratory Director and also assisted in surveys and excavations. Nine undergraduate participants in the NSF-REU field school were divided into three teams. As archaeologists fond of spatial analysis, we named these teams X, Y, and Z, after a common nomenclature for three dimensions of topographic relationships. Christopher Valvano, a graduate student at Michigan State University, supervised

team X, which included George Calfas (University of Illinois), Shalonda Collins (Mississippi State University), and Elizabeth Sylak (Albion College). Megan Bailey, a graduate of Bryn Mawr College, supervised team Y, with Mathew Davila (Western Oregon University), Annelise Morris (University of Illinois), and Camille Sumter (Mississippi State University). Terry Martin supervised team Z, with Joshua Brown (Mississippi Valley State University), Kathrine Hardcastle (Grand Valley State University), and Alison McCartan (Willamette University). Our nine undergraduate participants in 2008 were selected through a rigorous and competitive application process and each brought excellent academic credentials to bear in their work. They traveled to Illinois from locations spread across the nation and provided diverse perspectives of African-American, Native-American, Latin-American, and European-American cultural heritage. Our field work was also aided by a collaborating team of archaeologists affiliated with the Time Team America documentary program, including geophysicists Bryan Haley and Margaret Watters Wilkes, and archaeologists Eric Deetz, Rochelle Lurie, Catherine Bird, and Julie Schablitsky, among others.

Lastly, May and June of 2008 were also months of high rainfall in the Midwest. The Mississippi River rose to record-breaking levels and weakening levies threatened to give way and flood small communities ten miles to the west of the New Philadelphia town site. Our NSF field school participants helped fill sand bags to reinforce levies protecting the small town of Hull, Illinois. We also spent long hours packing up the Hull Museum and Library and loading their collections and exhibits onto a tractor-trailer for safe-keeping from the threatening flood waters.

Joshua Brown, Chris Valvano, and their colleagues filling sandbags to reinforce local levies (Photograph by Terrance Martin).

The research results and interpretations presented in the following chapters of this report are preliminary, and these report subjects will be expanded and updated in the future as

additional research on each area of investigation is completed. The aerial thermal survey conducted in May 2008 is discussed in Chapter 2 by Bryan Haley of the University of Mississippi. Chapter 3 of this report addresses historical and archaeological data obtained by teams Y and Z concerning a house site in Block 3, Lot 4. Chapter 4 focuses on team X's work on a series of layered house sites in Block 7, Lot 1. Chapter 5 turns to Block 8, Lots 1 and 2, and Time Team America's search for the remains of a school house that served African-American families in the 1850s and 1860s. Chapter 6 addresses remote-sensing and archaeological data concerning roadways in the space platted for King Street on the northern edge of Block 8. Chapter 7 focuses on soil core sample surveying of the stratigraphic profiles of earthen terraces created in the early 1990s west of a gravel road lying on the space platted for Broad Way on the north side of the town site. Concluding observations and recommendations for future work are presented in Chapter 8. Chapters 9 and 10 provide a bibliography of references cited in this report and our excavation unit summaries for 2008.

Chapter 2
An Investigation of New Philadelphia Using Thermal Infrared Remote Sensing

(Last updated: Nov. 25, 2008)

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Research results in this chapter were developed in part under a grant from the National Park Service and the National Center for Preservation Technology and Training. This chapter's contents are solely the responsibility of the authors and do not necessarily represent the official position or policies of the National Park Service and the National Center for Preservation Technology and Training.

A thermal infrared survey of the New Philadelphia site was conducted by Bryan Haley of the University of Mississippi and Tommy Hailey of Northwest State University in conjunction with Chris Fennell of the University of Illinois at Urbana-Champaign. A Destiny 2000 Powered Parachute (PPC), piloted by Hailey, was used as a platform for an Agema 570 thermal infrared camera for the survey. The goal was to identify anomalies that might be related to the historic occupation of the town.

Thermal Infrared Methodology

A target is discernible in thermal infrared data only if the physical properties of the materials differ enough to produce a contrast. These properties include conductivity (k) and volumetric specific heat (Cv), which is the amount of heat stored per volume over a given period of time (Perisset and Tabbagh 1981:170). Using k and Cv, a single property called thermal inertia (P) can be expressed as P = the square root of (k Cv) (Perisset and Tabbagh 1981:170). The higher the thermal inertia, the more resistant the material is to changing temperature. For soils, thermal inertia increases with the amount of moisture because the conductivity increases.

The real utility of an archaeological prospection technique is in delineating buried targets. For thermal infrared, the properties of a superficial layer covering a feature and the surrounding matrix are critical. A thermal anomaly is attenuated as either the conductivity or the depth increases. Therefore, wet soils and deep features are not ideal. The maximum target depth that can be detected diurnally is probably around 40 centimeters (Ben-Dor et al 1999:124). Long term studies may be able to reveal targets as deep as 2 meters in some cases (Nash 1985:77), but the data is very difficult to collect.

The thermal behavior of a material over time is dynamic. For short term studies, the diurnal heating cycle creates the most important temperature changes. The best time for maximum anomaly contrast is just after sunrise or just after sunset (Figure 2.1), although the

exact time is difficult to predict. The anomaly amplitude will also be inverted between these times (Ben-Dor et al. 1999:118).

One other important consideration is the ground cover on the survey area when the data is acquired. Bare earth is desirable and it has yielded relatively subtle, prehistoric Native American features (Haley 2004). Thermal infrared has been used infrequently on vegetation-covered sites, although recent research (Kiesow 2005) suggests that it may be used to enhance crop marks on Roman villa sites.

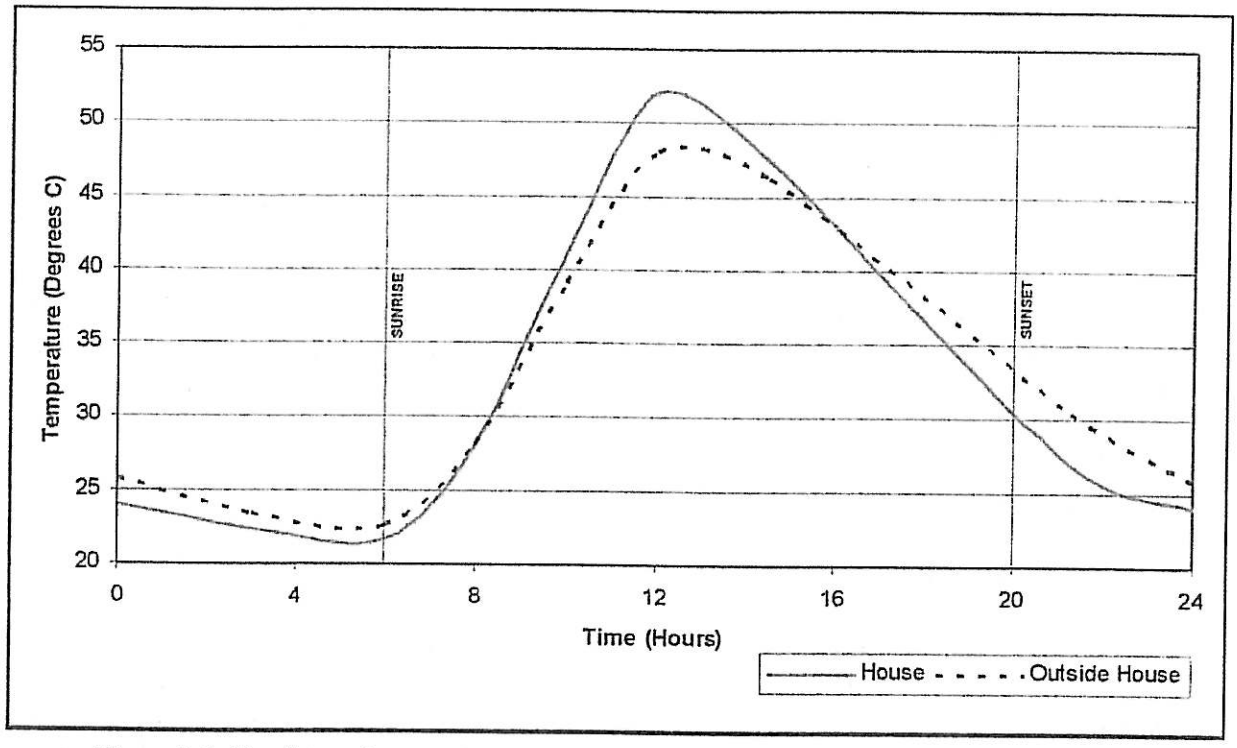

Figure 2.1. The thermal variation of a hypothetical buried Mississippian house versus the surrounding soil matrix for a 24 hour period.

Survey Area Description

The ground cover varied considerably at the New Philadelphia site during the time of the flyovers. A small area, just to the east of the turnoff to the road into the site, was mowed to a height of a two inches or less. The ground in this area also appeared to be affected by cars repeatedly parking there. To the west of the road into the site, the grass was mowed recently, but it had grown up taller than the first area. Tracks caused by mowers were also visible there. The rest of area was in tall grass, mostly between one and three feet in height. To the east of the main site core, town blocks were staked out and they were highlighted with types of grass. In other areas, mostly to the northwest and southeast of the site core, shrubs and trees were present. To the west, terraces were visible and it was apparent a considerable amount of soil modification had taken place. There was water pooling around some of these features. In short, the ground cover conditions were not optimal for thermal infrared survey.

Research Design

The Destiny 2000 Powered Parachute (PPC) is a two-seat experimental aircraft that is ideal for archaeological reconnaissance (Hailey 2004). The PPC is a low speed, minimal vibration, and flexible altitude aircraft – all essentials for the acquisition of high quality images (Hailey 2005:74). Also, the two seat configuration allows for passenger in the front seat to focus on flying the passenger in the back seat to acquire images (Hailey 2005:74). One limitation of the aircraft is the need for surface winds of less than approximately 12 miles per hour (Hailey 2005:76).

An Agema Thermovision 570, a broadband thermal infrared camera manufactured by Flir Systems Incorporated, was used for data acquisition. The Thermovision 570 is capable of measuring differences of temperature to .2 degrees Celsius and at wavelengths of 7.5 mm to 13 μm (FLIR Systems 1996:8-1). The camera has a 24 by 18 degree lens and produces a digital image composed of 320 by 240 pixels with a Focal Plane Array detector (FLIR Systems 1996:8-1). When used at an altitude of 100 meters, the camera and lens combination produces a field of view of 42 by 32 meters and a spatial resolution of about 13 centimeters at (FLIR Systems 1996:8-3).

To allow the images to be georeferenced to a standard coordinate system, targets constructed of aluminum flashing were placed around the survey area. The positions of these targets were determined using a Trimble ProXRS deferential Global Positioning System (GPS). The images were georeferenced using a combination of ArcGIS 9.2 and Erdas Imagine 8.7 software, generally using a first order or second order polynomial transformation. In these cases the images were near vertical, allowing the simply transformation method. In some cases however, flight lines forced images to be taken from an oblique angle, requiring a rubber sheeting method to be used.

Figure 2.2. Agema 570 thermal infrared camera.

Since it is difficult to predict the best time to acquire thermal images to reveal targets of a certain depth, images were taken during both morning and evening flyovers. The best two sets were taken on the morning of May 16, 2008 and the evening of May 17, 2008.

Results

Image composites for morning and evening data are shown Figure 2.3. There is a considerable amount of variation between the two data sets. The morning image is dominated by surface features and, as a result, it is difficult to identify anomalies that might be archaeologically significant. There is extensive shadowing visible to the west of the trees and this is probably highlighting the surface features.

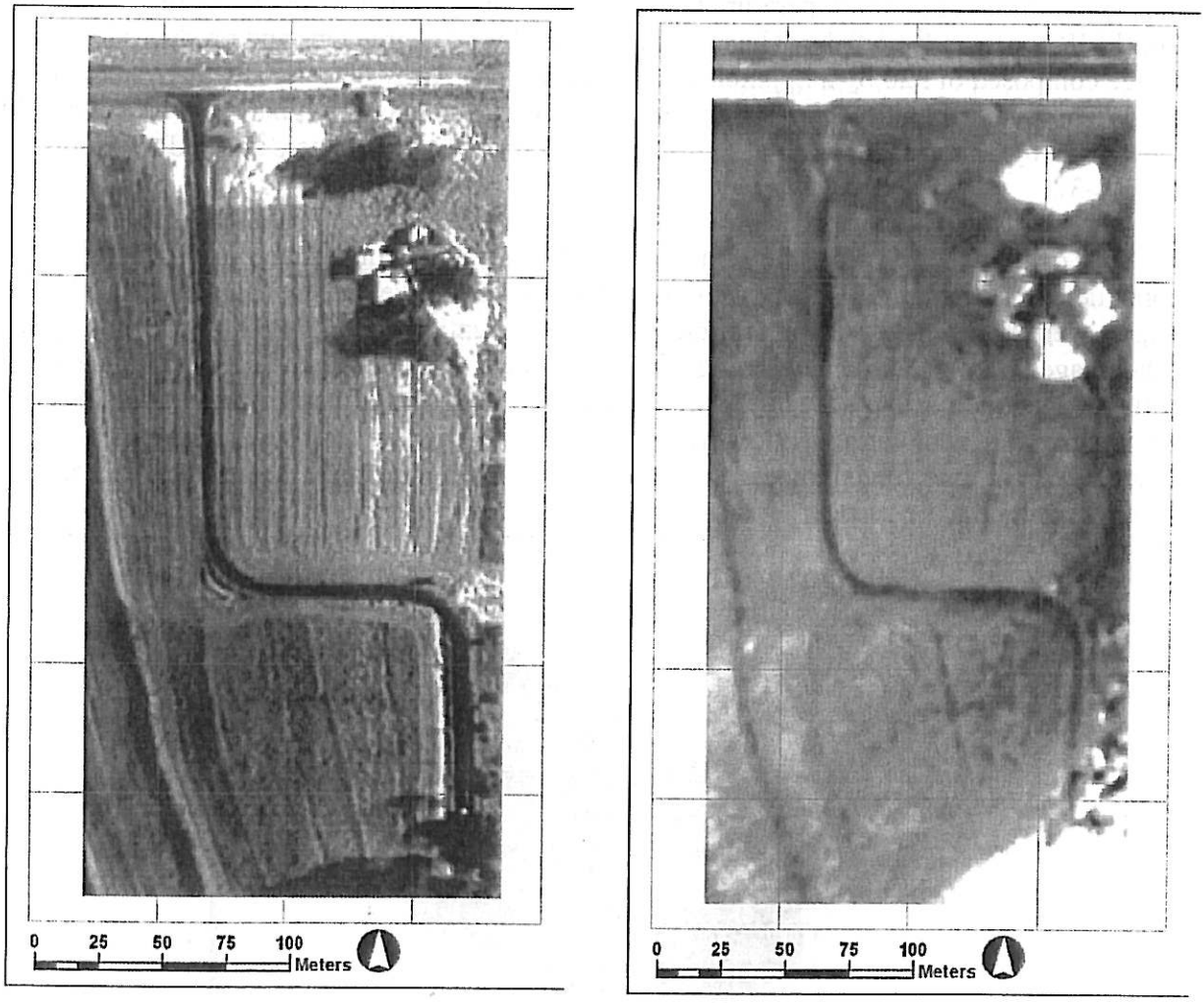

Figure 2.3. Morning (left) and evening (right) thermal infrared composite images.

Unfortunately, it was not possible to avoid shadowing in the morning data. Flying earlier, before the sun is high enough to cause shadowing, would decrease the amount of heat

that penetrates into the ground. The chances that buried archaeology would visible are very small. Flying late enough in the day to eliminate shadowing would not be safe.

The surface features were deemphasized in the evening data since flights were just before or just after sunset. There are more features of potential archaeological significance in this data than the morning data.

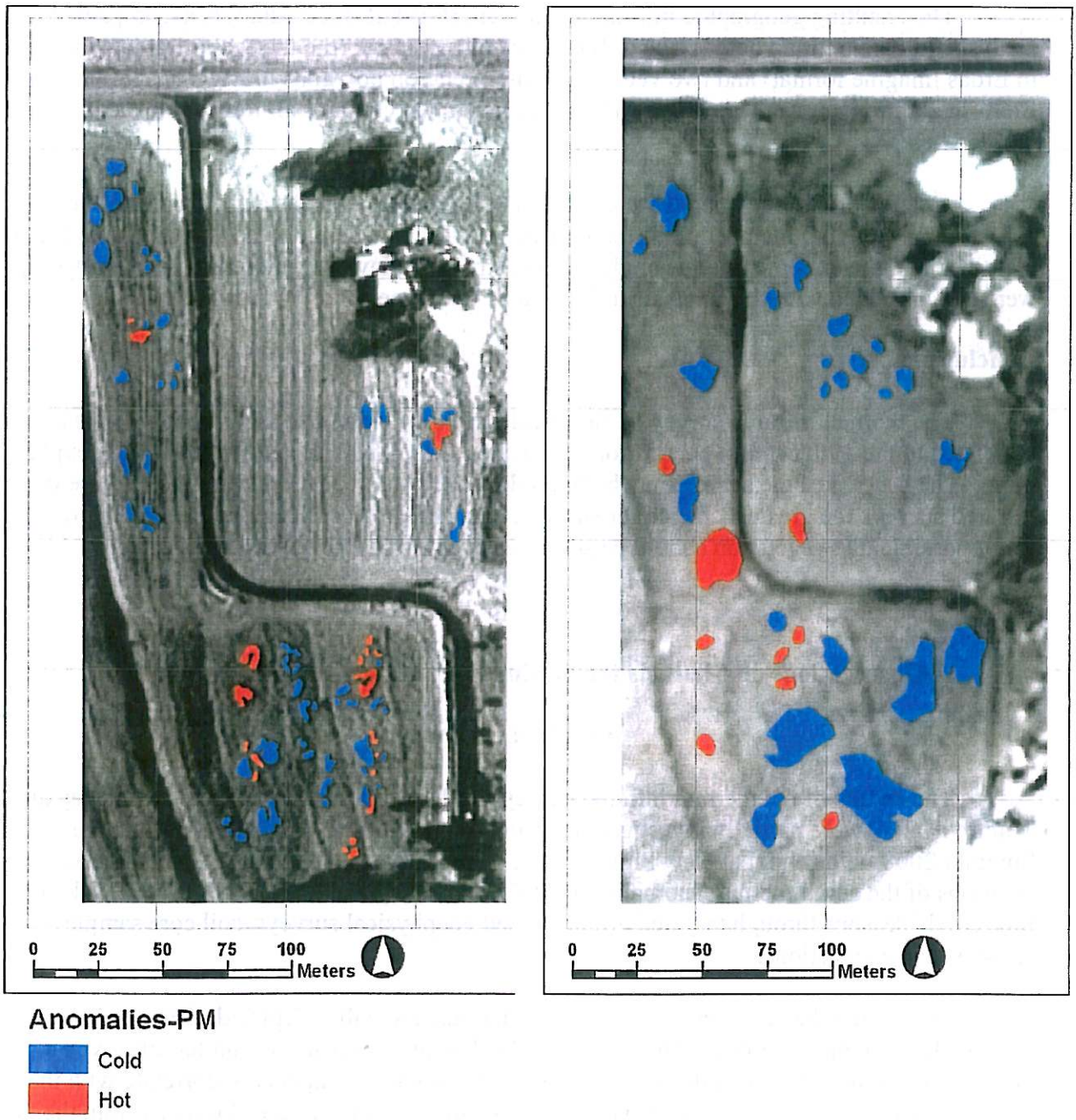

Figure 2.4. Morning (left) and evening (right) thermal infrared composite images with anomalies identified.

Anomalies were identified as hot or cold and coded on vector layers (Figure 2.4) for both data sets. Only anomalies that were not related to obvious surface features were included. Features such as stone foundations, characterized by low conductivity and low thermal inertia, should be visible as positive or hot targets in the morning and negative or cold targets in the evening. A pit is a type of anomaly that might show the converse thermal behavior (negative in the morning and positive in the evening).

The resulting geographic information system (GIS) of these data sets accompanied this analysis (but are omitted here). The GIS consists of two raster (the thermal infrared composites in Erdas Imagine format) and two vector (the interpretation polygons in ESRI shapefile format) files. In addition, an ArcMap document was included that contains all four of the data sets (but omitted here).

A series of oblique images were also collected, covering areas away from the site core. These areas were not included in the composite image since these down slope areas are heavily disturbed and the extreme oblique angle of these images. However, these images (omitted here) were also provided with this analysis to be used as reference.

Conclusions

The thermal infrared survey of New Philadelphia yielded a number of anomalies that may be related to the 19th century occupation of the site. Only subsurface testing can fully explain these. The success of the survey may be limited by the ground cover at the site. To give thermal infrared surveys the greatest chance for success, data should be collected in bare earth or, if that is not possible, the vegetation should be short and even across the survey area.

* * * * *

Observations on Methods for Testing the Thermal Infrared Survey Data

Christopher Fennell

The results of the thermal infrared survey conducted in May 2008 by Bryan Haley and Tommy Hailey were partially investigated through ground-based excavation work in the Summer 2008 field school at New Philadelphia. A more systematic testing of the precise locations of the aerial thermal anomalies identified by Haley and Hailey will be undertaken in future field seasons through targeted ground-based geophysical surveys, soil core sample surveys, and excavations.

Examining the data results of identified thermal anomalies depicted in Figure 2.4 above and in GIS data images provided by Haley and Hailey, our excavation team has observed a number of instances in which the locations of thermal anomalies appear to correlate with the known locations of sub-surface foundation remains from past residences located within the town site. These correlations will be analyzed and tested further in upcoming field seasons.

Bryan Haley also served as a geophysical consultant with Time Team America's staff who investigated portions of Block 8 in July 2008 in a search for the foundation remains of a

small school house that served African American children in New Philadelphia in the mid-1800s. In addition to testing various forms of ground-based geophysical surveys in Block 8, Haley also analyzed the thermal infrared data in that area and the Time Team archaeologists ground-tested promising locations with excavations. A report on the results of Time Team's work on Block 8 is provided in Chapter 5 of this report.

Our Summer 2008 field school participants also investigated an area of comparative data between ground-based geophysical surveys and the aerial thermal survey in the area platted as King Street along the north edge of Block 8. As discussed in Chapter 6 of this report, an electric resistivity survey conducted by Michael Hargrave showed a clear alignment of anomalies running east to west along the space of a side street within the town plan. This location was covered by a stone and gravel stretch of narrow roadway in a 1939 aerial photograph, but is today covered entirely in agricultural soils and vegetation, with no visible remains of the road on the ground surface. The thermal infrared survey did not produce data indicative of anomalies that would correlate with the space of such a roadbed. Excavations in the Summer of 2008 in a sampled space of the resistivity anomalies in King Street revealed a lens of gravel and stone from an early 1900s roadbed buried 1 foot below the current ground surface, and, beneath that, the remains of a late 1800s packed dirt roadway with wheel rut depressions. In comparing the thermal infrared data with the ground-based electric resistivity data, it is remarkable how clearly the remains of the road appear in resistivity survey results but not in the thermal infrared results. As we continue to investigate the thermal infrared anomalies in future field seasons, it may become clear that this aerial survey method is highly valuable and cost-effective for locating the buried remains of foundations to buildings, but cannot detect the more subtle remains of town infrastructure elements, such as buried roadbed remains.

2008 New Philadelphia Archaeology Report:
http://www.anthro.uiuc.edu/faculty/cfennell/NP/2008ReportMenu.html

New Philadelphia Archaeology Project web site:
http://www.anthro.uiuc.edu/faculty/cfennell/NP/

Chapter 3
Block 3, Lot 4

(Last updated: Dec. 20, 2008)

Our survey and excavation efforts focused on Lot 4 in Block 3 in 2008 for a number of reasons. This lot is located at the north edge of the town site, adjacent to Broad Way, the major street within the town as planned by Frank McWorter. An existing gravel road runs along the space of Broad Way, representing a remnant of the nineteenth-century plan. Block 3, Lot 4 was located in an area very likely subjected to successive episodes of development and occupation in the town's history, with its position at the north-central entrance point for the town and along a regional road that ran east-to-west along the town's northern edge. The archaeology project had previously uncovered Feature 2, a lime slacking pit, in the area of Lot 4, and that feature dated to the late nineteenth-century (see Fig. 3.3). Such a pit was utilized for mixing mortar and plaster to use in the construction of house or business structures. We had continued work in the area around Feature 2 in 2004 and 2005, searching for the remains of the structures served by that source for construction material. However, our results had been inconclusive.

In 2004-2006 we had also positioned a large field tent in the area of Block 3, Lot 4, to provide shelter during the day for our field lab and as a space for visitors to congregate when touring excavations each summer. This was a logical placement of this tent facility, adjacent to an existing gravel-covered parking area, and we made that choice after consulting with members of the local and descendant communities on how best to provide such on-site shelter for visitors and researchers. That tent arrangement, however, constrained our ability to conduct more thorough surveys and excavations in the area of Block 3, Lot 4. In advance of the 2008 field season, we arranged to place this tent facility elsewhere on the town site, so that Block 3, Lot 4 could be re-examined with geophysical surveys and excavations could then target those areas identified in resulting survey data. A resistivity survey conducted in Lot 4 in the week of May 27, 2008, revealed substantial anomalies that Dr. Michael Hargrave recommended for further exploration through soil core probes and excavations. This resistivity survey was particularly productive due to the heavy rainfall the area had received in earlier weeks. Such conditions often yield richer data quality, because the overall increase in rainfall can result in variable moisture retention of the ground surface from one specific area to another as a result of buried cultural remains.

The next sections of this chapter provide background information on Block 3, Lot 4 based on documentary evidence, followed by a discussion of the survey and excavation results obtained in the 2008 field season. Research efforts and results concerning other portions of Block 3, including the nearby site of a blacksmith operation, are described in our 2006 report (Shackel et al. 2006).

Block 3, Lot 4 History

As summarized in our 2006 report (Shackel et al. 2006), the following data concerning past property owners and potential residents of Block 3, Lot 4, can be ascertained from documentary records, including deeds, tax ledgers, and census lists.

The deed and census data indicate that Frank McWorter sold Block 3, Lot 4 to Henry Brown in 1838. There are ten transactions involving the lot throughout the following century. Using the deed, census, and tax records (see below), we can infer that the Cobb family made some improvements to the property before 1867, but by 1868 buildings no longer exist on the lot. The Clark family owned the site before the earliest known tax record. The Hadsell families owned the lot and lived in New Philadelphia for most of the 1870s. William Welbourne purchased the lot in the twentieth century and he and his family appear in the 1880 Federal Census. Welbourne, his wife Josephine and their three children are classified as white. The deed, tax, and census data related to Block 3, Lot 4 follow. The names italicized are those who may have occupied the lot since they appear both in the deed and census data. The Venicombe family may also have maintained a household on this location in the early 1900s.

DEED TRANSACTIONS

Year	*Seller*	*Purchaser*	*Reference (page, line)*
1838	Frank McWorter	Henry Brown	47, 1
1854	Frank McWorter	Elick Clark	47, 8
1865	*Alexander Clark*	A. B. Cobb	47, 16
1866	A. B. Cobb	*Jesse Hadsell*	47, 14
1878	*Jesse Hadsell*	Marcus Kellum	47, 27
1905	Fanie West	William Hyde	47, 36
1916	*William Welbourne*	W.H. Hyde	47, 42
1917	W. H. Hyde	Martha McWorter	47, 43
1918	Martha McWorter	F & N Venicombe	47, 44
1938	F.& N. Venicombe	W.H. Struheker	47, 47

HADLEY TOWNSHIP TAX RECORDS

Year	*Name Assessed*	*Value of Lot*	*Improvements*
1867	A.B. Cobb	$3.00	$22.00
1868	A.B. Cobb	$5.00	$0.00
1869	A.B. Cobb	$5.00	$0.00
1870	J. P. Hadsell	$5.00	$0.00
1871	J. P. Hadsell	$5.00	$0.00
1872	J. P. Hadsell	$5.00	$0.00
1875	J. P. Hadsell	–	$20.00
1878	J. P. Hadsell	–	$8.00
1883	M. Kellum (Lots 3,4,5 & 6)		$175.00
1888	Sylvester Baker (Lots 3,4,5 & 6)		$80 (lot 4 listed improved)

1850 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Clark	Casiah	44	F	M	not given	KY
	Simeon	24	M	M	not given	KY
	Alexander	13	M	M	not given	IN
	Mary A.	16	F	M	not given	IL
	James	19	M	M	not given	IL
	Thomas	11	M	M	not given	ME
	Alex	18	F	B	not given	VA
	John S	80	M	B	not given	MD

1855 STATE CENSUS

NAME	FIRST NAME	RACE	no. in household
Clark	Alexander	B	3

1860 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Clark	Alexander	32	M	M	Blacksmith	IN
	Hyley	27	F	M	Housework	KY
	Mary	9	F	M	not given	IL
	Charlie	5	M	M	not given	IL
	Lucy	3	F	M	not given	IL
	Eliza Ann	1	F	M	not given	IL

1865 STATE CENSUS*

NAME	FIRST NAME	RACE	NO. IN HOUSEHOLD
Hadsell	J. P.	W	8
Hadsell	James	W	7
Clark	A.	B	6

(* the name Jesse Hadsell in the deed transaction can be either J.P. Hadsell or James Hadsell. Both are listed here)

1870 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION

(Clark and Hadsell appear in the census data, but the first names do not correspond exactly with the deed records.)

1880 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	RELATION	ORIGIN
Welburn	Wm.	28	M	W	Head	ENG
	Josephine	28	F	W	Wife	IL
	Melvin	4	M	W	son	IL
	Mary	2	F	W	daughter	IL
	Baby	0.08	F	W	daughter	IL

Note:
Kasiah Clark, mother of Alexander Clark (listed in the 1850 census), is classified as mulatto, 76 years of age, and living in the Louisa McWorter household according to the 1870 and 1880 Federal Census.

Block 3, Lot 4 Archaeology

The following is a summary of the archaeology for Block 3, Lot 4, in 2008. For a more detailed technical overview see the unit and feature summaries in Chapter 10 of this report. The results and interpretations presented here are preliminary, and will be expanded and updated as additional research is completed in regard to the 2008 investigations on this lot.

Archaeologists in Teams Y and Z worked together to investigate anomalies revealed in electric resistivity surveys conducted by Dr. Michael Hargrave in May of 2008. Hargrave typically recommends that archaeologists place priority on those anomalies in geophysical survey results that appear both in the data of a magnetic survey and also in an electric resistivity survey of the same space. An earlier magnetic survey had revealed anomalies A31 and A32, as shown in Figure 3.1 below. Earlier resistivity surveys in the same area had proven difficult to

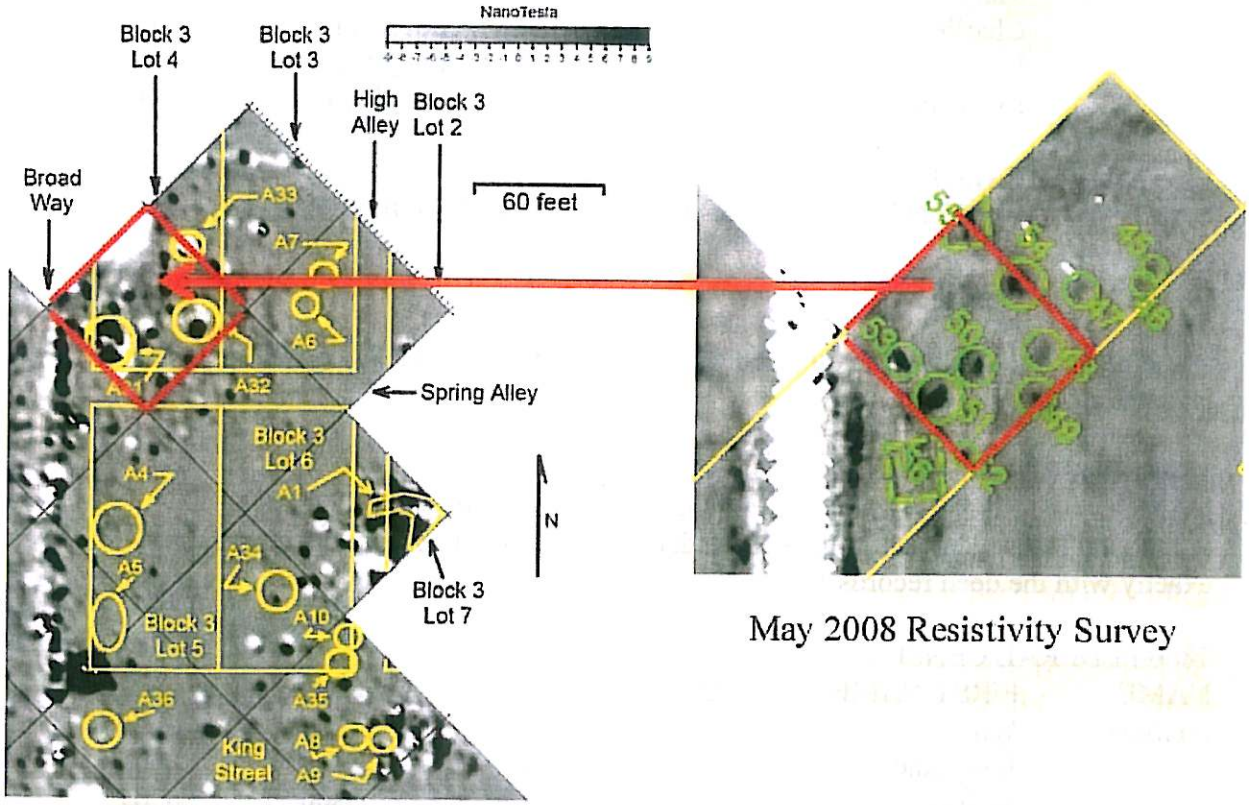

Figure 3.1. 2004 magnetic survey data in Block 3, Lot 4 (left), showing anomalies A31 and A32, and 2008 electric resistivity data results of the same lot (right), revealing anomalies A50-A53 in same space (Geophysical survey data images by Michael Hargrave; overlay by Christopher Fennell).

interpret, due to dry soil conditions in prior years. The Spring months of 2008 were marked by higher than normal rainfalls. In May, 2008, a new resistivity survey in Block 3, Lot 4 benefited from higher soil moisture content and revealed anomalies A50-53, which correlated with the same space of anomalies A31 and A32 in the earlier magnetic survey (Fig. 3.1).

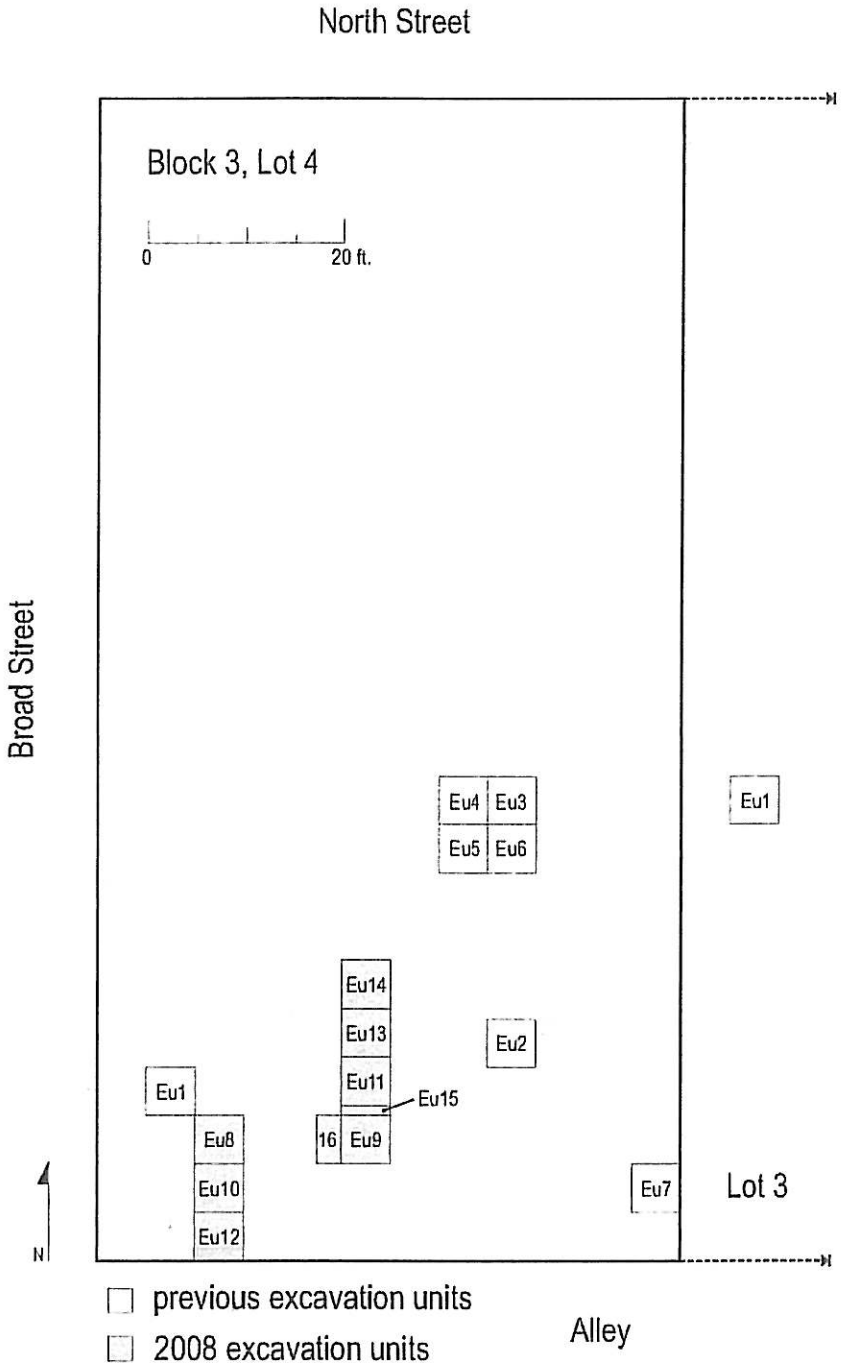

Figure 3.2. Map of excavation unit locations within Block 3, Lot 4. In 2008, Team Y concentrated on EU 9, 11, 13-16, and Team Z excavated EU 8, 10, and 12 (Image by Christopher Valvano).

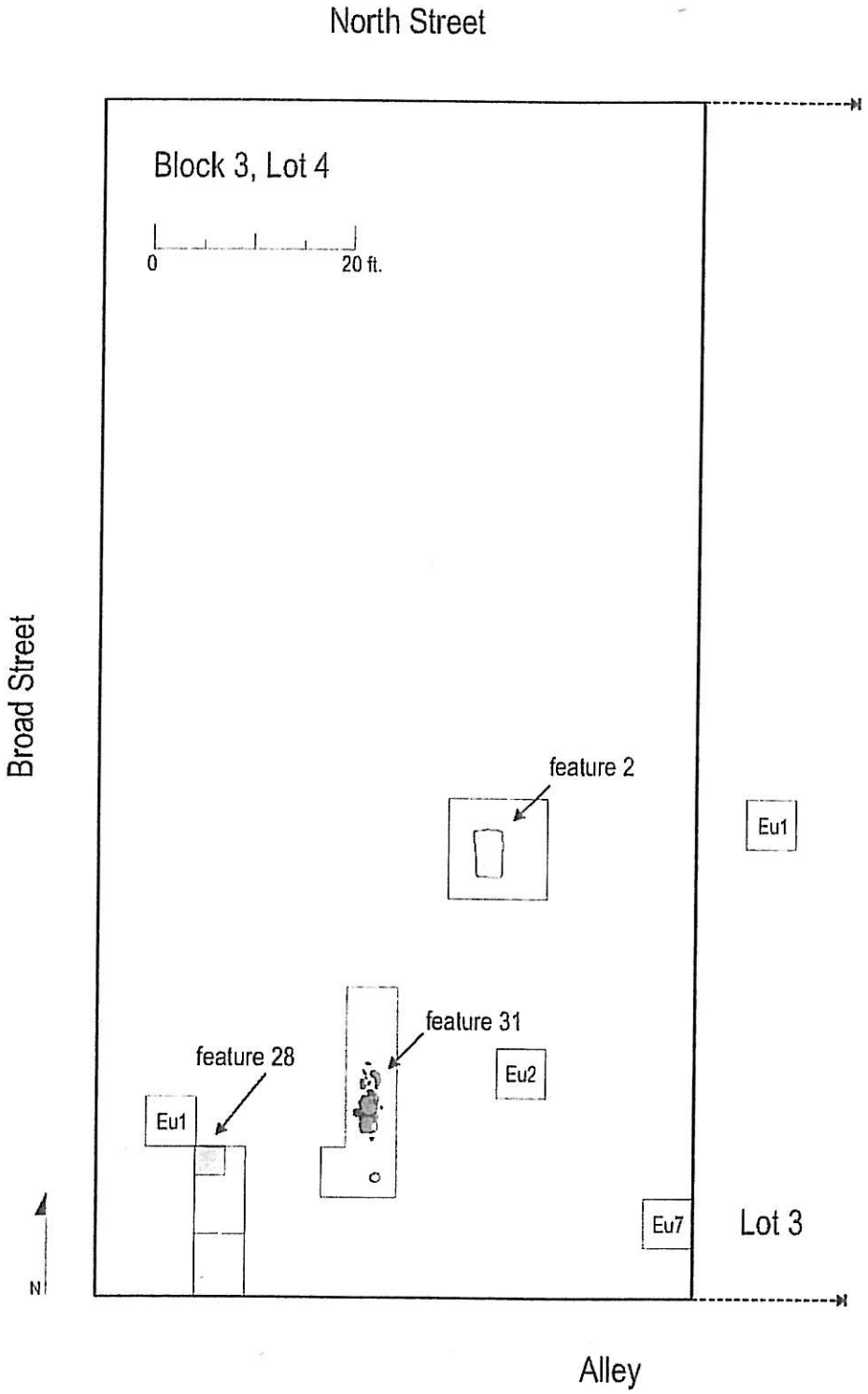

Figure 3.3. Map of feature locations within Block 3, Lot 4. Feature 2 is a lime slacking pit, uncovered in 2004. Features uncovered in 2008 included Feature 31, a fieldstone foundation base; Feature 29 is the circular post mold immediately south of Feature 31; Feature 28 is a portion of a refuse pit spanning several occupation periods of this residential site (Image by Christopher Valvano).

Teams Z and Y first tested the locations of anomalies A50-53 with systematic soil core probes, using a one-inch diameter soil core sampler and a grid of sample locations in one foot increments spread across the area of these anomalies. Based on the results of this soil core survey within the defined area, Teams Z and Y placed excavation units on the most promising locations over these geophysical anomalies.

As shown in the maps provided in Figures 3.2 and 3.3, archaeologists in Team Z concentrated in the area of anomaly A53, and placed excavation Units 8, 10, and 12, uncovering Feature 28. Archaeologists in Team Y began excavations to ground truth the area of the most productive soil core probes in the location of anomaly A50. They excavated Units 9, 11, and 13-16, and uncovered Features 29, 31, 38, and 39 within these units.

Feature 28. Feature 28 consists of a portion of a multi-layered refuse pit associated with the structural remains of an adjacent house site. This trash pit contained extensive refuse, including ceramics, bottles, glass wares, iron wares, tin wares, and household hardware, dating principally from the 1870s through the early decades of the 20th century (Fig. 3.4). Feature 28

Figure 3.4. East profile of Feature 28, showing samples of artifacts in east wall of the excavation units (Photograph by Terrance Martin).

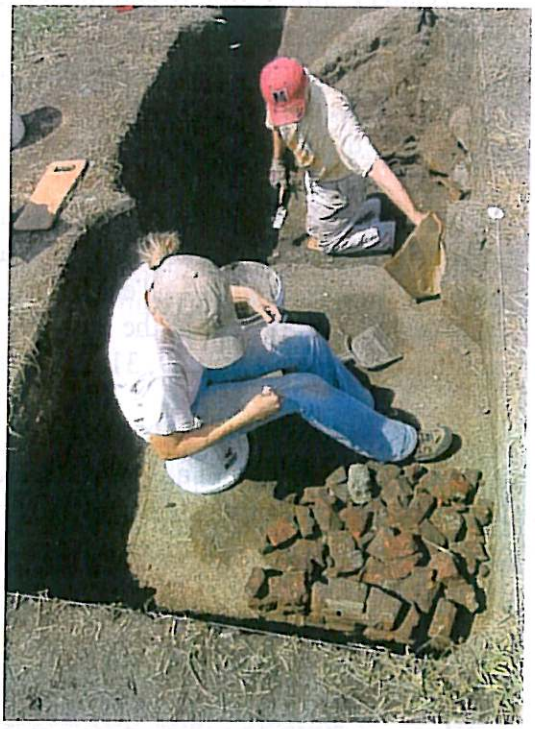

Figure 3.5. Terry Martin and Kathrine Hardcastle of Team Z excavate Feature 28. Next to Kathrine is a sample of the brick fragments included within Feature 28 (Photograph by Joe Conover).

also contained extensive faunal remains from the subsistence refuse of the households that had occupied the site, and also the remains of several domesticated cats. A nearby fieldstone foundation associated with this trash pit very likely supported a brick chimney stack at the end of an adjacent house. Feature 28 contained a high volume of brick fragments, and no complete bricks (Fig. 3.5). It appears that at some point the brick chimney was taken down, whole bricks were removed for reuse elsewhere, and the broken fragments of bricks were deposited into this trash pit.

Among the many engaging artifacts recovered from this refuse pit was a campaign pin with image of William Jennings Bryan, from the 1896 or 1900 presidential contest (Fig. 3.6). Among other roles, Bryan was memorable to many Americans as the skilled orator and populist Democratic candidate who opposed a Republican platform of promoting a gold standard for the United States monetary system to aid industrialists and bankers (Burton 2007:356). As historian Vernon Burton emphasizes, Bryan's populist political advocacy linked the sentiments of demands for social reform from the early 1800s to the new challenges of the 20th century:

> Bryan's powerful rhetoric invoked the millennial ideal of antebellum reform: "Having behind us the producing masses of this nation and the world, supported by the commercial interests, the laboring interests and the toilers everywhere, we will answer [the Republicans'] demand for a gold standard by saying to them: You shall not press down upon the brow of labor this crown of thorns, you shall not crucify mankind upon a cross of gold" (Burton 2007:356, quoting Bryan).

He was that target of opponents' many criticisms, most famously portrayed as the "cowardly lion" in Frank Baum's (1908) parable of the 1900 election, entitled *The Wonderful Wizard of Oz* (Burton 2007:352-53).

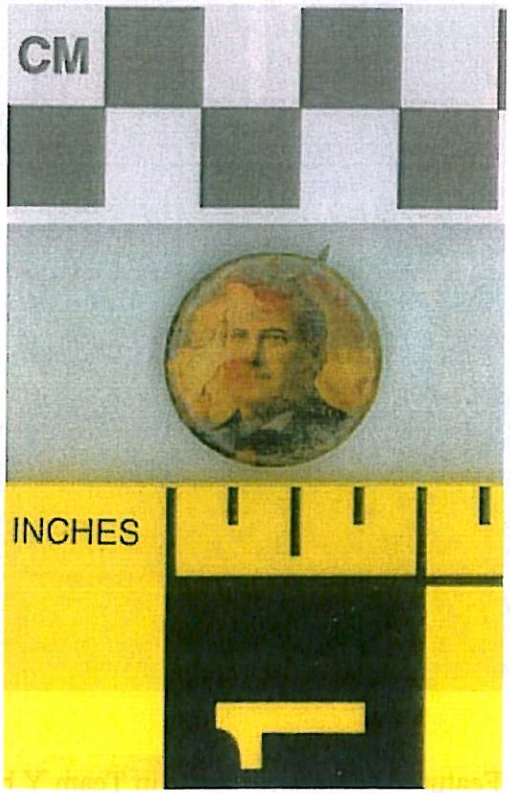

Figure 3.6. William Jennings Bryan campaign pin from Feature 28 (Images by Christopher Fennell).

Also recovered from Feature 28 were whole bottles, including embossed Coca-Cola and soda water containers (Fig. 3.7). These numerous artifacts from the early 1900s were likely associated with a household of the Welbourne or Venicombe families. Additional analysis of the artifacts and faunal remains recovered from the interior of Feature 28 will be added to this report in the near future, as further investigations are completed.

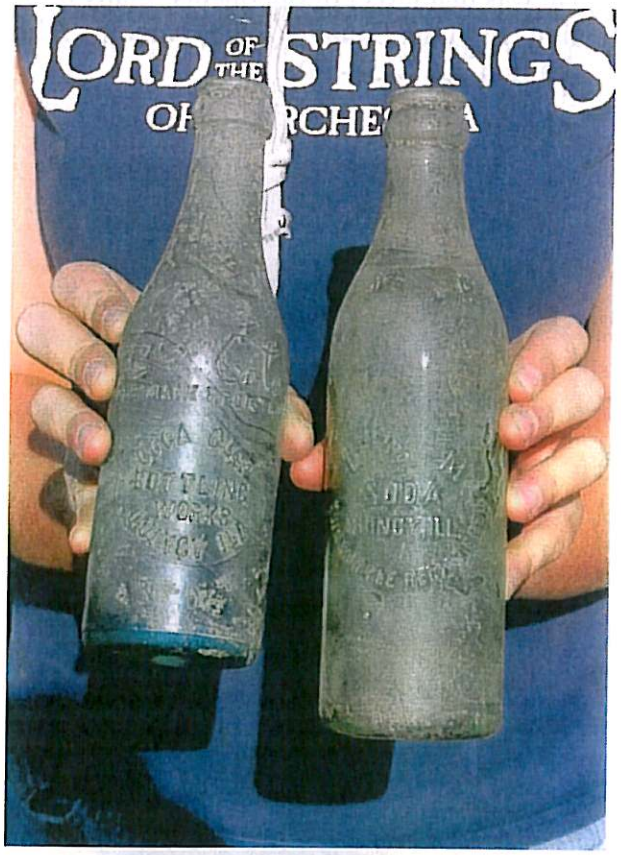

Figure 3.7. Team Z excavator Alison McCartan holds two bottles from Feature 28, including a Coca-Cola container (on left) bottled in Quincy, Illinois (circa 1893-1916), and an early 1900s soda water bottle (right), also from Quincy (Photograph by Joe Conover).

While Team Z worked on investigations of Feature 28, archaeologists in Team Y began excavations that uncovered portions of the foundation remains of a house structure related to Feature 28. Team Y defined Feature 31 as the fieldstone foundation base for a chimney stack that stood at the east end of that house. Features 38 and 39 consist of a builders trench and foundation fill adjacent to that fieldstone base. Feature 29 is a postmold that once held a support post for the house foundation, and is located in a north-south line that defined the base of the east façade of the structure. Figure 3.8 provides an overall map of these features, and closer scale plan views of the features are provided in Figures 3.9 and 3.10.

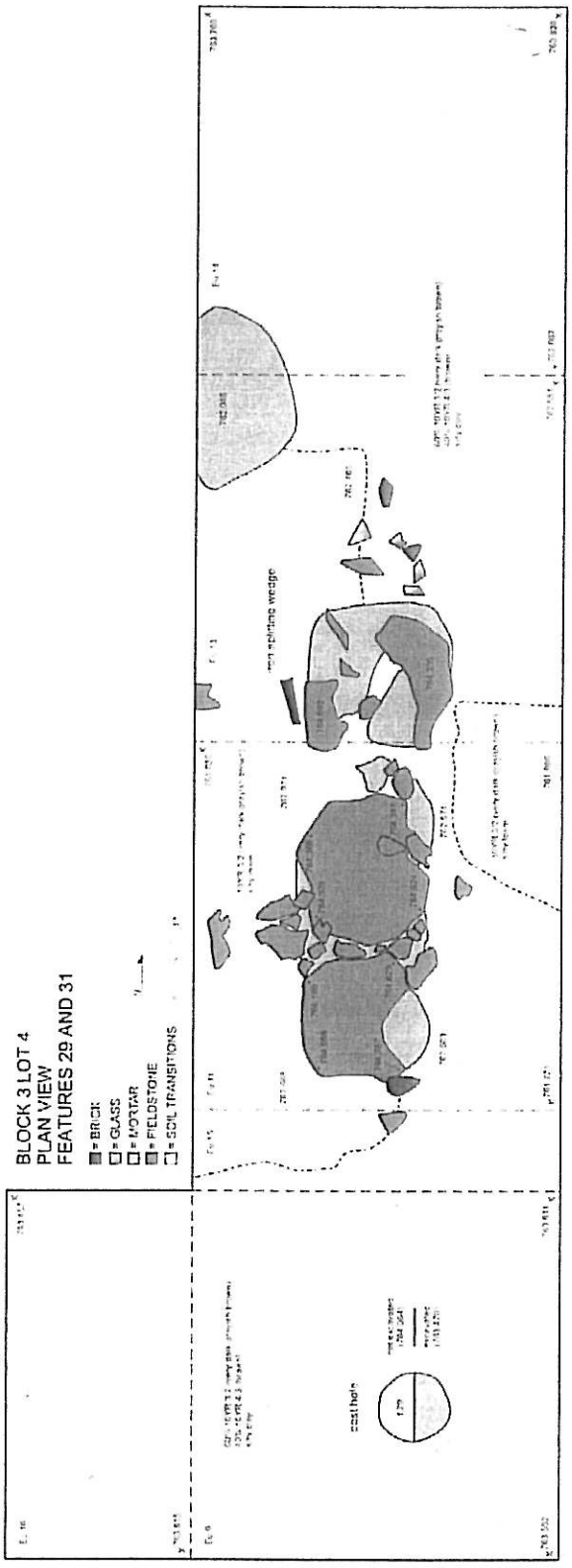

Figure 3.8. Plan view of Features 29, 31, 38, and 39 together (see Figs. 3.9 and 3.10 for close-up plan views of each of these features) (Image by Christopher Valvano).

Feature 29. Feature 29 is a circular soil stain that Team Y interpreted as a post mold (Fig. 3.9). It is located to the south of Feature 31 in the southeast quadrant of Block 3 Lot 4 Excavation Unit 9 Levels A3-B1. The dimensions of Feature 29 are 0.88 ft. (N-S) x 0.9 ft. (E-W). Feature 29 was bisected north-south in level B1, and excavators then removed the east half of the feature bisect and profiled the western wall of the feature. The feature fill contained a small number of historic-period artifacts.

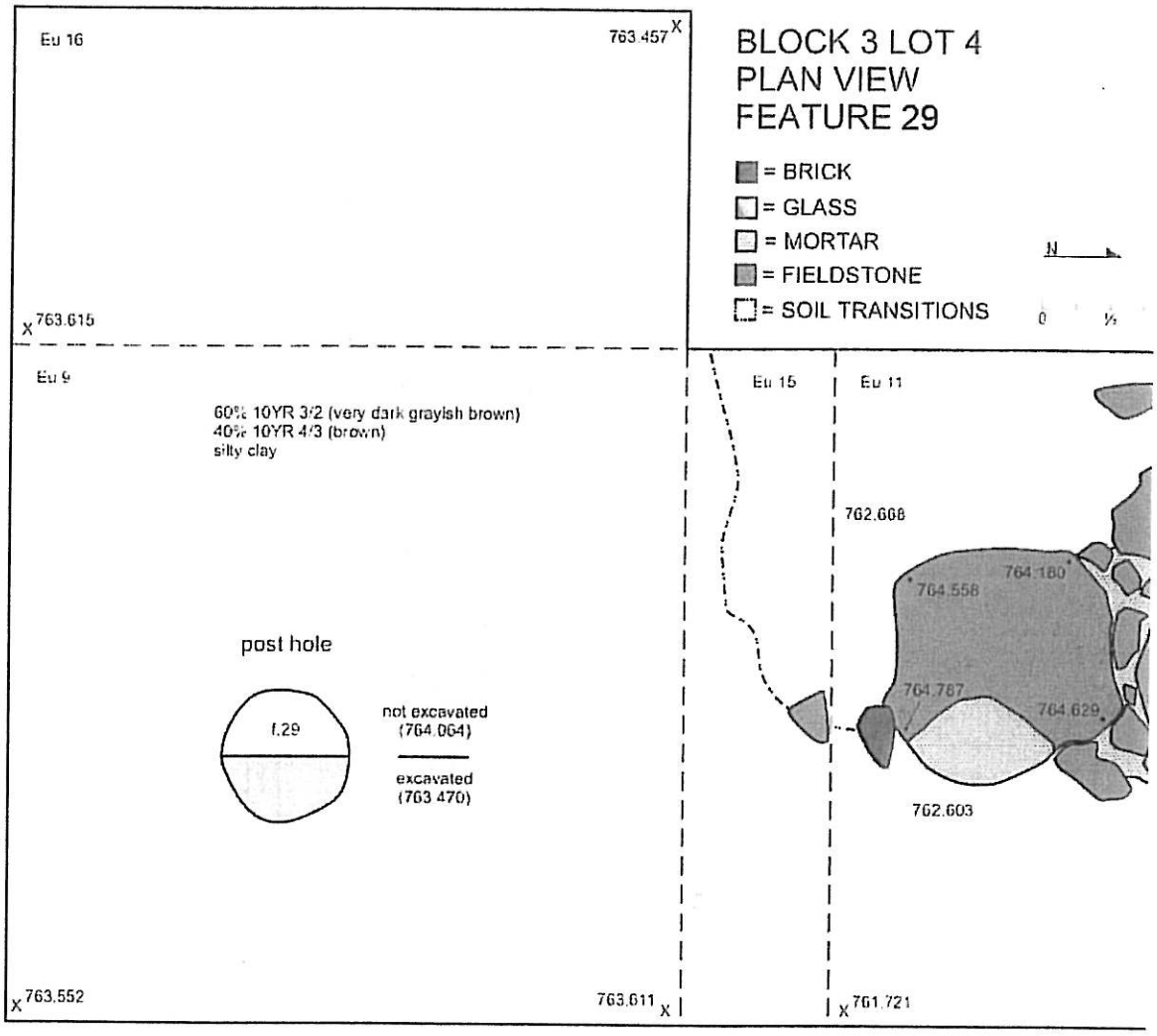

Figure 3.9. Plan view of Feature 29, post mold, within EU 9, a 5 ft square excavation unit. Elevations (e.g., 763.552) are in U.S. survey feet above mean sea level (Image by Christopher Valvano).

The team isolated Feature 29 in a pedestal during the excavation of Level B1, then bisected the feature north-south and removed the eastern half in an arbitrary 0.5 ft. level. Archaeologists mapped the west wall profile of the feature, which indicated that the feature tapered to a bowl-like shape at its base. The eastern portion of feature fill contained brick, charcoal, mortar, nails, metal fragments, and bone. The soil below this fill was sterile.

Feature 31. Feature 31 was first discovered in Block 3 Lot 4 Excavation Unit 11, Levels A2-B2. It is a concentration of two large fieldstones oriented north-south and surrounded by several large cobbles and aggregates of mortar (Figs. 3.10). Team Y interpreted this assembly as an isolated foundation which likely served as the base of a brick chimney stack. Within

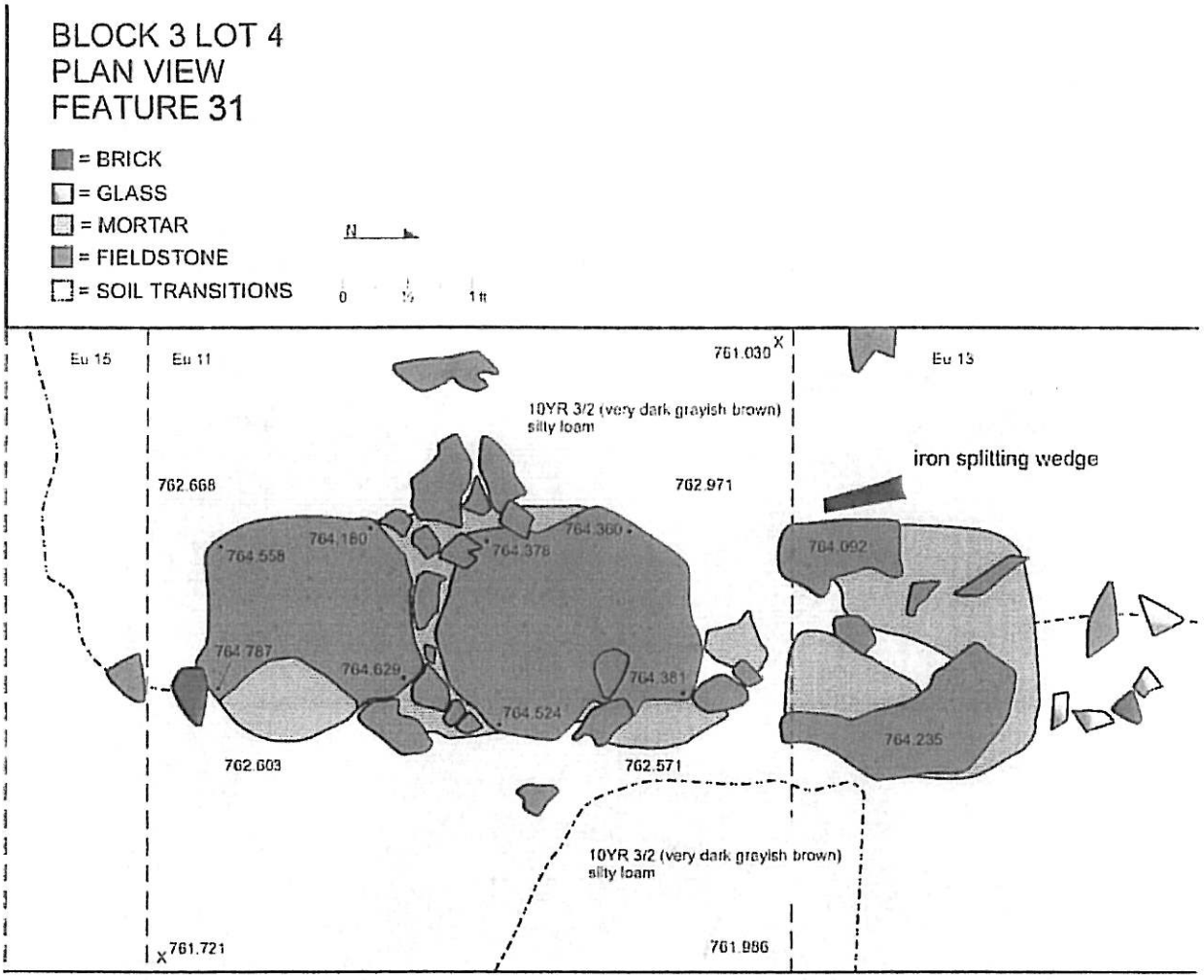

Figure 3.10. Plan view of Feature 31, fieldstone foundation base, within EU 11 and EU 13. Feature 38 consists of the 10YR 3/2 silty loam deposit on the west (interior) side of Feature 31, and Feature 39 is a builders trench represented by the 10YR 3/2 silty loam deposit defined on the east (exterior) side of Feature 31 (Image by Christopher Valvano).

Excavation Unit 11 the dimensions of the feature are 4.6 ft. (N-S) x 1.9ft. (E-W). A large amount of flat glass and nails was recovered from the matrix surrounding the feature. The team opened Excavation Units 13 and 15 to determine the extent of the feature.

Feature 31 consists of the remains of an isolated foundation composed of two large gray fieldstones surrounded by flat rocks and mortar (Fig. 3.11). It was identified as the source of

geophysics anomaly A50. The feature is oriented north-south and bisects Excavation Units 11 and 13. The average opening elevation is 764.421 ft. above median sea level (amsl) and the average elevation of the feature's base is 764.208 ft. amsl. The feature emerged in Level A2 of Excavation Units 11 and 13, and was fully exposed at the top of Level B2 in Excavation Unit 11 and at the base of Level B1 in Excavation Unit 13. Its depth varies from 0.75 ft. to 1.4 ft. Feature 31's dimensions are 6.4 ft. (N-S) x 1.9 ft. (E-W) at its widest points (Figs. 3.10-3.12).

The soil west of the feature tended to have a color of 10YR 3/2 (very dark grayish brown) and a texture of silty clay. Brick, charcoal, mortar, red sandy deposits, and pebbles of varying sizes were found west of the feature. Team Y recovered a large number of architectural materials such as flat glass, nails, and other metal objects from this side. Ceramics, bone, and beads were also found. To the east of Feature 31, the soil had a texture of silty clay and a color of 10YR 3/2 mottled with 10YR 6/6 (brownish yellow). Archaeologists recovered artifacts from this side that were similar in number and variety to those recovered from the west side.

Figure 3.11. NSF-REU field school excavator Annelise Morris and Team Y describe Feature 31 and surrounding Features 38 and 39 and other deposits in a field school tour and progress report on each excavation site (Photograph by Terrance Martin).

The team interpreted the feature's characteristics as being consistent with a fieldstone foundation base for a brick chimney stack. Feature 31's proximity to Feature 29, a post mold, suggests that it was part of a structure that relied on wooden posts for support rather than an extensive stone foundation. In addition, the team noted that Feature 31 is south of a heavy

mortar lens, which was composed of flat and round aggregates of mortar, and west of Feature 28, which contained a concentration of used and broken bricks. One possible interpretation of these observations is that recycling activities were carried out nearby, wherein bricks that once topped the chimney were removed, the mortar and broken bricks discarded, and the intact bricks reused elsewhere. Due to time constraints, archaeologists were unable to excavate further west to explore in greater detail the possible connections between Feature 31 and Feature 28.

Figure 3.12. Feature 31 and surrounding area of Features 38 and 39 and other deposits (Photograph by Megan Bailey).

Feature 38. Feature 38 is present in Levels B1-B5 of Block 3 Lot 4 Excavation Unit 11 and continues in Excavation Units 13 and 15. It is located immediately west of Feature 31 and has dimensions of 5.0 ft. (N-S) x 1.5 ft. (E-W) in Excavation Unit 11. Feature 38 is the east portion of a rectangular area of structure fill, a dark organic soil containing architectural materials. It is bounded to the north, south, and east by clay subsoil. It is likely that the feature extends to the west of Excavation Unit 11 but due to time constraints the team was unable to explore the feature further during this field season.

Feature 38 is the eastern portion of a rectangular concentration of dark fill. It located immediately below and west of Feature 31. Feature 38 was identified in Levels B1-B5 in the west half of Excavation Unit 11, Levels B2-B4 in the west half of Excavation Unit 13, and Levels B1-B3 in the west half of Excavation Unit 15. The team identified Excavation Unit 11 as

containing the eastern edge, Excavation Unit 13 as containing the northern edge, and Excavation Unit 15 as containing the southern edge of this feature. The average opening elevation for Feature 38 is 764.122 ft. amsl and the average elevation of the base is 761.752 ft. amsl. Its dimensions are 9.75 ft. (N-S) x 2.5 ft. (E-W). The soil within Feature 38 was 10YR 3/2 (very dark grayish brown) in color and had a silty clay texture; the surrounding soil was 10YR 6/6 (brownish yellow) clay subsoil. Archaeologists recovered large amounts of mortar, nails, and flat glass from Feature 38, as well as moderate amounts of bone, brick, and ceramics. The team interpreted Feature 38 as structural fill below Feature 31. Although Feature 38 extends deeper and to the west, archaeologists could not excavate these areas due time constraints and the end of the field season.

Feature 39. Feature 39 is present in Levels B4 and B5 of Block 3 Lot 4 Excavation Unit 11 and extends into Excavation Unit 13. It was discovered in the northeast corner of Excavation Unit 11; its dimensions in that area are 2.2 ft (N-S) x 1.9 ft. (E-W). The feature is an intrusion of dark organic fill bounded to the north, south, and west by clay subsoil, and likely represents a builder's or maintenance trench dug into the exterior side of the foundation of the chimney stack. Due to time constraints and the conclusion of the field season, the excavation team was unable to determine the eastern border of Feature 39.

The average opening elevation of Feature 39 is 763.222 ft. amsl and the average elevation of the feature's base is 761.471 ft. amsl. The feature's dimensions are 2.0 ft. (N-S) x 1.8 ft. (E-W). The soil in this feature had a color of 10YR 3/2 (very dark grayish brown) and a silty clay texture. The team recovered charcoal, mortar, glass, eggshell, and nails from this feature, as well as bone, beads, and ceramics in smaller amounts. Time constraints prevented the archaeologists from reaching the bottom of this feature.

Chapter 4
Block 7, Lot 1

(Last updated: Dec. 20, 2008)

One of our 2008 excavation teams focused on Block 7, Lot 1, based on multiple points of information, including previously known data and newly discovered evidence. A structure was located in the southeast portion of what was Block 7, Lot 1, of the New Philadelphia town site in a 1939 high-altitude aerial photograph (Fig. 4.1). This farm was described in Burdick's (1992) memoir of the town site's mid-1900s remains as the "Betsy house." That house was removed sometime in the decades before a 1998 high-altitude aerial photograph, which shows no remains

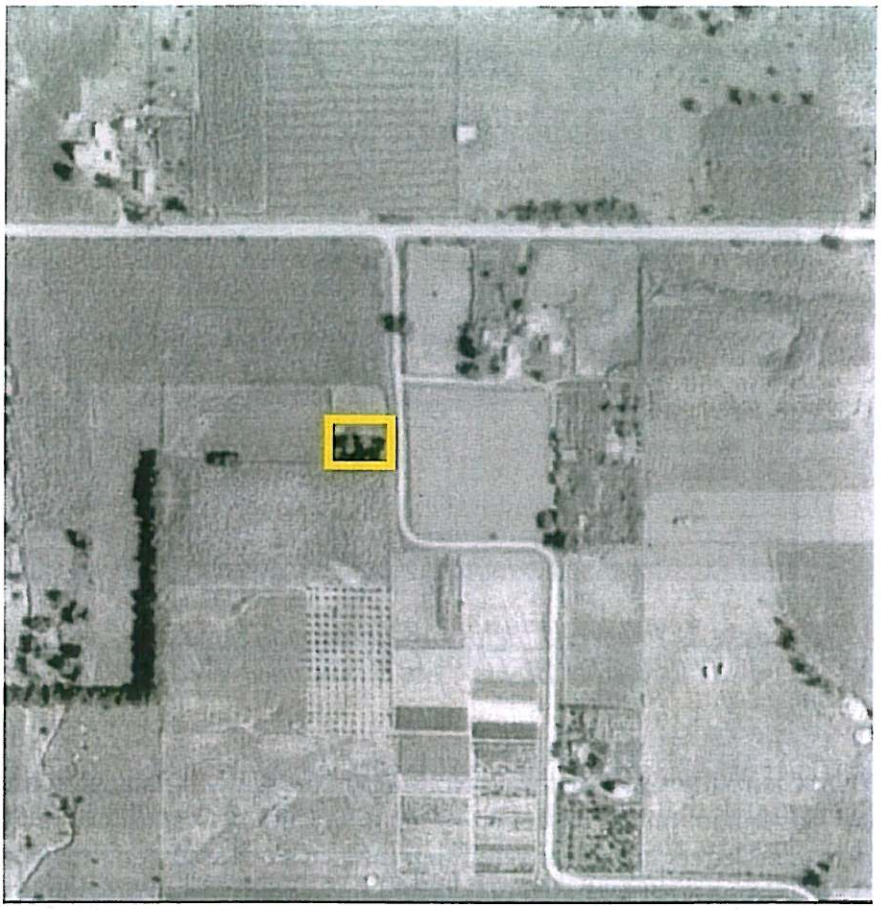

Figure 4.1. 1939 aerial photograph of New Philadelphia town site. The farmstead referred to as the "Betsy house" by Burdick (1992), located on part of Block 7, Lot 1, is outlined by the rectangle in the left center portion of this image (Photograph from U.S.D.A. Aerial Photographs Collection; overlay by Christopher Fennell).

above ground. This area also showed a heavy concentration of artifacts in a walk-over survey conducted in 2002 and 2003 (Gwaltney 2004), including a modest number of early nineteenth-century ceramic fragments on the ground surface, and a higher frequency of surface artifacts dating to the late nineteenth century. Archaeologists worked on two excavation units (each 5 ft. square in size) in Block 7, Lot 1, in 2004 to locate the potential layers of remains of the residence or business operations that once existed there. Feature 3 was identified as part of a fieldstone foundation of a house in the southeast corner of Lot 1 associated with artifacts that dated to the 1870s (Shackel et al. 2006) (Fig. 4.2). A later magnetic gradient geophysical survey of this area by Michael Hargrave primarily showed anomalies in the same southeast corner portion of the parcel (Hargrave 2006) (Fig. 4.3). An aerial thermal survey conducted in May 2008 also shows evidence of potential sub-surface foundation remains in this vicinity (see Chapter 2 of this report).

Figure 4.2. Feature 3, fieldstone foundation remains to an 1870s house site located in Block 7, Lot 1, was uncovered in 2004 (Shackel et al. 2006).

In 2008, Claire Martin, a historian working on the New Philadelphia project, discovered a misplaced tax ledger book in the basement of the Pike County Courthouse in Pittsfield. Examining this aged ledger, she discovered that it listed a tax assessor's records of valuations assessed in 1845 in areas that included blocks and lots within New Philadelphia (Hadley Township Tax Records 1845). Frank McWorter was listed as the owner of Block 7, Lot 1, and the value of that parcel was assessed at $60, which was significantly higher than the values placed on other parcels in that area in 1845. This documentary evidence provided an indication that a building may have been standing on Block 7, Lot 1 in 1845, resulting in such a higher assessed value. Based on our knowledge of Feature 3 from excavations in 2004, and this newly discovered evidence in 2008, one of our teams focused on further excavating the southeast portion of Lot 1 to learn more about the 1870s occupation and to see if the remains of an earlier residence or business structure underlay that site location.

The next sections of this chapter provide background information on Block 7, Lot 1 based on documentary evidence, followed by a discussion of the survey and excavation results obtained in the 2008 field season. Research efforts and results concerning other portions of Block 7 are described in our 2006 report (Shackel et al. 2006).

Block 7, Lot 1 History

As summarized previously in our 2006 report (Shackel et al. 2006), the following data concerning past property owners and potential residents of Block 7, Lot 1, can be ascertained from documentary records, including deeds, tax ledgers, and census lists.

The earliest recorded sale of Block 7, Lot 1, occurred in 1848 when Frank McWorter sold the property to James Pottle. In total there are over 20 transactions involving this property until 1930. The purchasers also found in the census data include: Christopher Luce, Squire McWorter, and William Hadsell. There is strong likelihood that at least some of these families lived on this lot. The tax records indicate that some improvements existed on the lot until 1867. After this date the value of improvements decrease significantly. However, in 1878 W. S. Cowder was assessed for $114 in improvements, although this assessment also includes Lots 1 and 2. In 1883 and 1888 J. O. Smith was assessed for $125 and $60 respectively, for Lots 1-4 on Block 7. The deed, tax, and census data follow and the italicized names are those that may have resided on the lot, since they appear in both the deed and census records.

DEED TRANSACTIONS

Year	*Seller*	*Purchaser*	*Reference (page, line)*
1848	Frank McWorter	*James Pottle*	53,1
1850	*Christopher Luce*	G. W. Berrian	53,4
1852	*James Pottle*	*Christopher Luce*	53,2
1852	*Christopher Luce*	*James Pottle*	53,5 S1/2
1853	G. W. Bowman	*Squire McWorter*	53,9
1853	William Wadsell	*Squire McWorter*	53,10
1855	*Squire McWorter*	Eliza Brown	53,8
1859	Eliza Brown	Perry Smith	53,11
1866	W. Perry Smith	*William Hadsell*	53,18
1866	John O. Smith	*William Hadsell*	53,20
1867	W. Perry Smith	John Cornwell	53,12
1867	John Cornwell	*William Hadsell*	53,19
1868	John Cornwell	Benjamin Grey	53,13
1877	Benjamin Grey	W.S. Cowden	53,15
1877	W. S. Cowden	*William Hadsell*	53,16
1878	*William Hadsell*	John O. Smith	53,17
1884	John O. Smith	A.R. Burdick	53,22
1888	J. B. Smith	William Gem	53,23
1902	James McKinney	William Butler	53,24
1930	Charles Venicombe	F. W. Vencombe	53,36
1934	County Clerk	John Seigle	53,37

HADLEY TOWNSHIP RECORDS

Year	*Name Assessed*	*Value of Lot*	*Improvements*
1867	Perry Smith	$2	$25
1868	Perry Smith	$5	$4
1869	Benjamin Gray	$5	$4
1870	Benjamin Gray	$3	$0
1871	B. Gray	$3	$0
1872	B. Gray	$3	$0
1875	Undocumented	–	–
1878	W. S. Cowder (Lots 1-3)	–	$114
1883	J. O. Smith (Lots 1-4)	–	$125
1888	J. O. Smith (Lots 1-4)	–	$60

1850 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Pottle	James	38	M	M	Cabinet Maker	MA
	Ruby	28	F	M	not given	MA
	James	3	M	M	not given	MA
	Luce C. S.	42	M	W	Bapt. Preacher	ME
	Sally	41	F	W	not given	NH
	George	15	M	W	Farmer	ME
	Moses	8	M	M	not given	IL
McWorter	Squire	33	M	M	Farmer	KY
	Louisa	26	F	M	not given	KY
	Lucy	5	F	M	not given	IL
	Squire	3	M	M	not given	IL
	George	1	M	M	not given	IL
	Mary A.	22	F	W	not given	ENG
	Mary A.	3	F	M	not given	CAN
	Lucy	0.4	F	M	not given	IL

1855 STATE CENSUS

NAME	FIRST NAME	RACE	NO. IN HOUSEHOLD
McWorter	Squire	B	11

1865 STATE CENSUS

NAME	FIRST NAME	RACE	NO. IN HOUSEHOLD
Hadsell	Wm.	W	5
McWorter	S.	B	5

1880 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	RELATION	ORIGIN
Hadsell	Wm.	57	M	W	Head	ENG
	Jane	58	F	W	Wife	OH

Block 7, Lot 1 Archaeology

The following is a summary of the archaeology for Block 7, Lot 1, in 2008. For a more detailed technical overview see the unit and feature summaries in Chapter 10 of this report. The results and interpretations presented here are preliminary, and will be expanded and updated as additional research is completed in regard to the 2008 investigations on this lot.

To begin further investigation of the likely remains of successive occupations on the southeast corner of Block 7, Lot 1, Team X first relocated the coordinates of Excavation Unit 2, in which Feature 3 had been uncovered in 2004 (Figs. 4.3, 4.6).

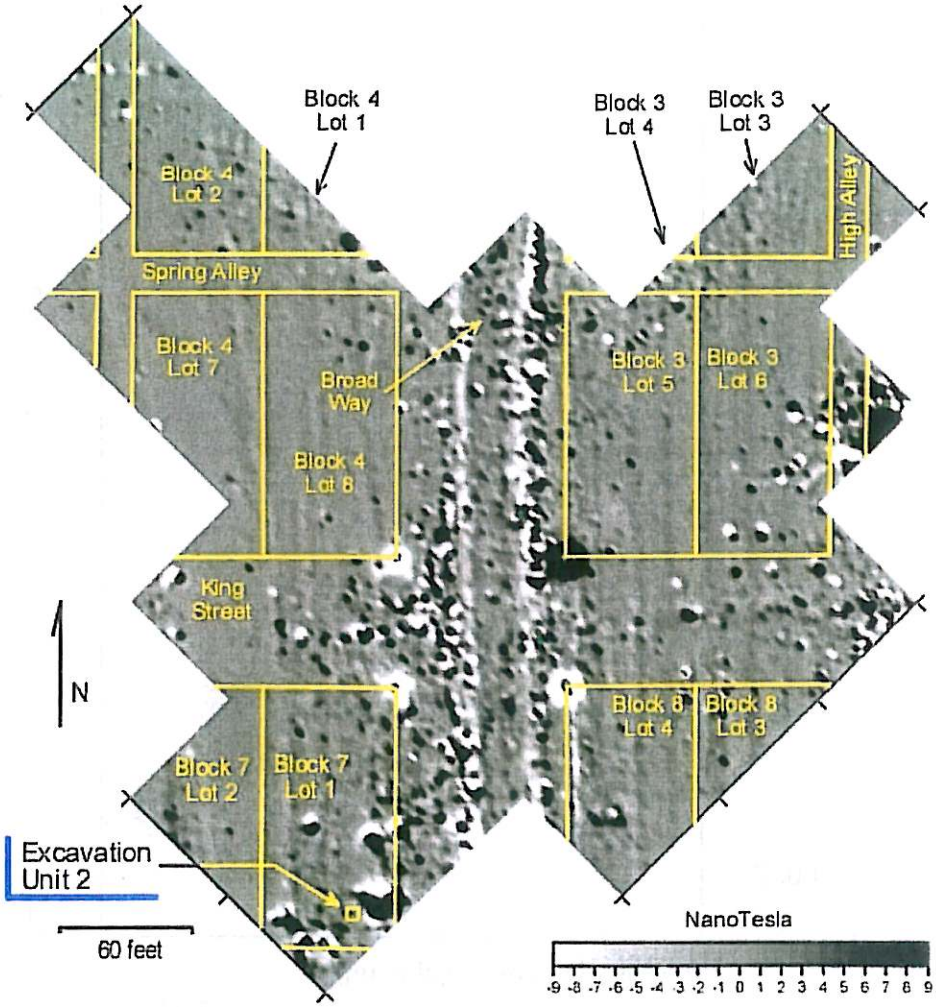

Figure 4.3. Magnetic survey data map, showing anomalies in southeast corner of Block 7, Lot 1, and location of Excavation Unit 2, in which Feature 3 was located in 2004 excavations (Image map by Michael Hargrave; overlay by Christopher Fennell).

In the 2008 field season, archaeologists excavated three more units in this Lot 1, located in the immediate vicinity and to the east of Unit 2 and the buried fieldstone foundation segment labeled

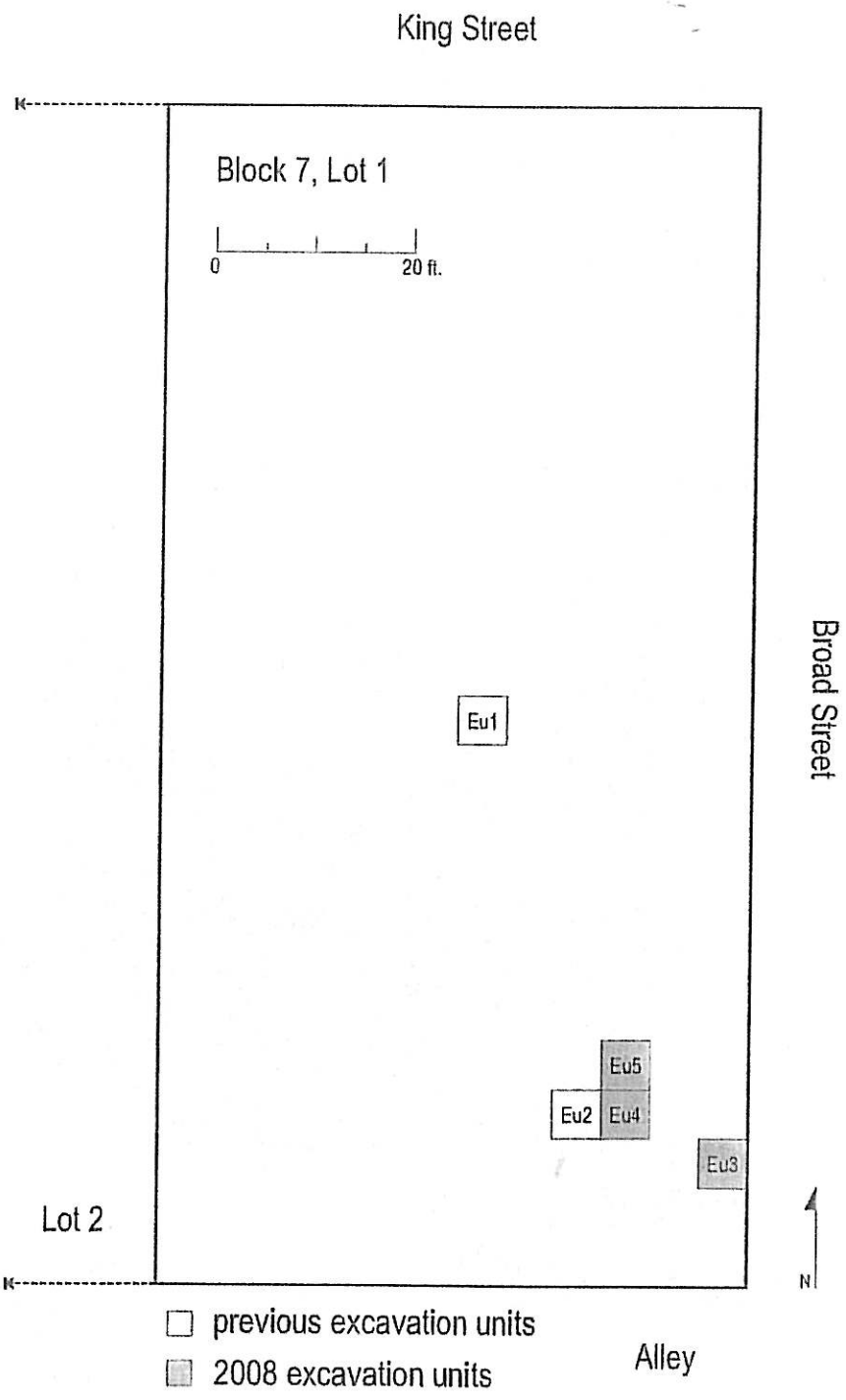

Figure 4.4. Map of Excavation Units in Block 7, Lot 1. Units 1 and 2 were excavated in 2004, and Units 3-5 in 2008 (Image by Christopher Valvano).

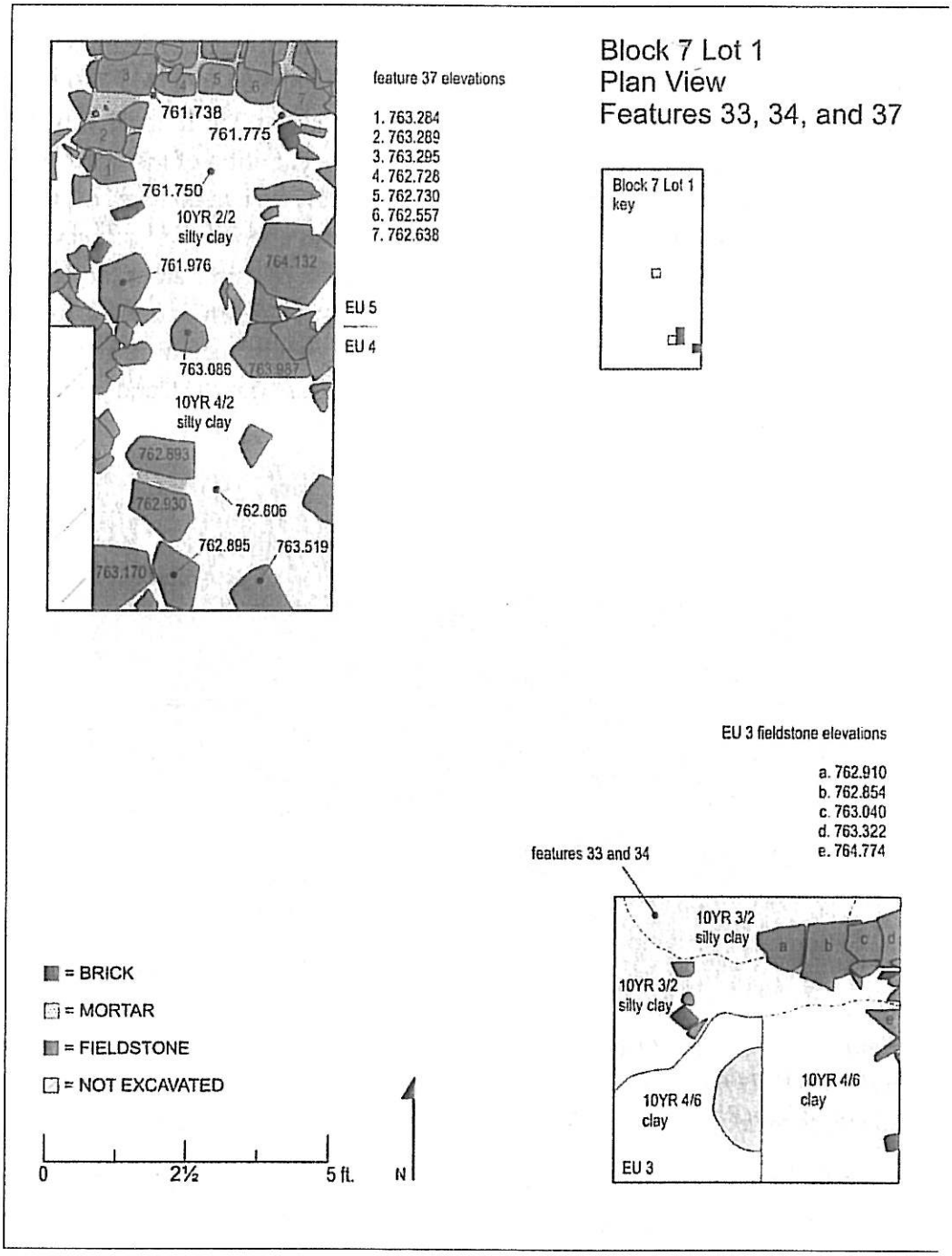

Figure 4.5. Map of Excavation Units 3-5 and Features 33, 34, and 37. Elevations (e.g., 762.910) are in U.S. survey feet above median sea level (Image by Christopher Valvano).

as Feature 3. Figure 4.4 provides a map of the locations of these excavation units, and Figure 4.5 provides plan views of the Features 34, 35, and 37 uncovered in these new excavations.

Excavation Unit 3 is located 10 ft. east and 5 ft. south of Unit 2. Team X excavated level A1 as an arbitrary 0.5 ft. level. Level A1's average opening elevation is 765.769 ft. above median sea level (amsl), and its average closing elevation is 765.262 ft. amsl. Level A1 is a combination of silty loam and plow zone, with a large concentration of historic ceramics (n=97), glass (n=164), and part of a harmonica reed. Archaeologists excavated level A2 to a natural depth of 0.92 ft. below ground surface. The excavation team chose to forgo excavating this level to an arbitrary depth of 0.5 ft. after exposing a concentration of brick, stone, and mortar in the eastern half of Unit 3. This "rubble concentration" averaged a depth of 0.92 ft. below ground surface. Level A2 yielded a large amount of architectural debris, including historic artifacts such as wire and machine cut nails (n=129), container and flat glass (n=287), and three distinct ceramic pipe fragments.

Figure 4.6. Team X at work in Block 7, including supervisor Christopher Valvano and NSF-REU field school excavators George Calfas, Shalonda Collins, and Elizabeth Sylak (Photograph by Doug Carr, Illinois State Museum).

Level B1 in Unit 3 was excavated to a 0.5 ft. arbitrary level. Because level B1 contains soil nearly identical to its overlying levels but exists at depth beyond the reach of historic plows, the archaeologists describe this level as sub-plow zone. Team X first excavated the soil surrounding the rubble concentration. This soil yielded historic artifacts dating to the late nineteenth and early twentieth centuries. Artifacts from this soil are domestic items such as ceramic vessel fragments (n=82) and decorative copper tubing found near copper wiring. The tubing is likely either a fragment of a lamp or curtain rod (see Sears and Roebuck Catalogue 1902:803, 903). Artifacts in this soil are mainly architectural items like machine and wire cut nails, flat glass, and tar-like roofing paper. The team then excavated level B2 to a 0.5 ft. arbitrary level, and recovered historic artifacts throughout that level. The bottom of this level

showed two horizontal soil transitions. These two soils were excavated separately and labeled B3–B4 (northern), and C1–C2 (southern).

Archaeologists excavated level B3 as a 0.5 ft. arbitrary level. The team began excavating level B3 with intent of removing the majority of the northern half of Unit 3. This half contains mottled soil made up of 70% 10YR 3/2 (very dark grayish brown) and 30% 10YR 4/6 (dark yellowish brown) silty clay. As excavations proceeded, portions of the mottled soil appeared more solidly 10YR 4/6 (dark yellowish brown) clay. Team members later identified this soil as a clay-cap surface (Feature 33) that exists in the northern wall of Unit 3. As excavators encountered Feature 33, they left the solid 10YR 4/6 (dark yellowish brown) clay portions in situ and removed the surrounding organic 10YR 3/2 (very dark grayish brown) silty clay. Further excavations of level B3 exposed a second 10YR 3/2 silty clay layer underneath Feature 33. The team later identified this soil as Feature 34. This method of excavation defined Unit 3 with a trench-like appearance with two elevated areas of 10YR 4/6 clay (one to the north and one to the south), and a low area of 10YR 3/2 silty clay within the center portion (Figs. 4.7, 4.8).

Archaeologists excavated level C1 to an arbitrary 0.5 ft. level. Level C1 is subsoil, made up of mottled 30% 10YR 3/2 (very dark grayish brown) and 70% 10YR 4/6 (dark yellowish brown) silty clay. The team excavated this level in the southern half of Unit 3 to confirm this soil as sterile subsoil different in nature to the clay cap identified in the northern portion of Unit 3. The level shows intense burrowing activity with fewer historic artifacts than previous levels in Unit 3. Team X determined that the presence of large burrows and historic artifacts required further excavations to identify the soil as sterile subsoil.

Archaeologists excavated level C2 to an arbitrary 0.5 ft. level. Level C2 is a bisect excavation of C1. It is made up of 10YR 4/6 (dark yellowish brown) clay. The team removed the eastern half of C1 (also the southeastern quadrant of Unit 3) and recovered no cultural artifacts. This level confirmed the excavation team's distinction between the clay soil in Unit 3's southern half and the clay cap in Unit 3's northern half. Excavations in this unit were terminated at this point.

Feature 33. Feature 33 is a semi-circular clay cap overlying an identically shaped dark organic fill (Figs. 4.7, 4.8). Archaeologists bisected this feature and excavated separate levels with separate bag numbers. Both halves of Feature 33 are made up of 10YR 4/6 (dark yellowish brown) clay. Feature 33's east bisect was removed as a single level a1-east. Level a1-east's average opening elevation is 763.271 ft. amsl, and its average closing elevation is 763.094 ft. amsl (0.177 ft. average thickness). This level contained 16 pebble-sized mortar and brick fragments. Feature 33's west bisect was removed as a single level a1-west. Level a1-west's average opening elevation is 763.174 ft. amsl, and its average closing elevation is 762.921 ft. amsl (0.253 ft. average thickness). This level contained 10 pebble-sized mortar and brick fragments with one similar sized piece of bone, glass, and porcelain.

Figure 4.7. Excavation Unit 3 with Features 33 and 34 (Photograph by Christopher Valvano).

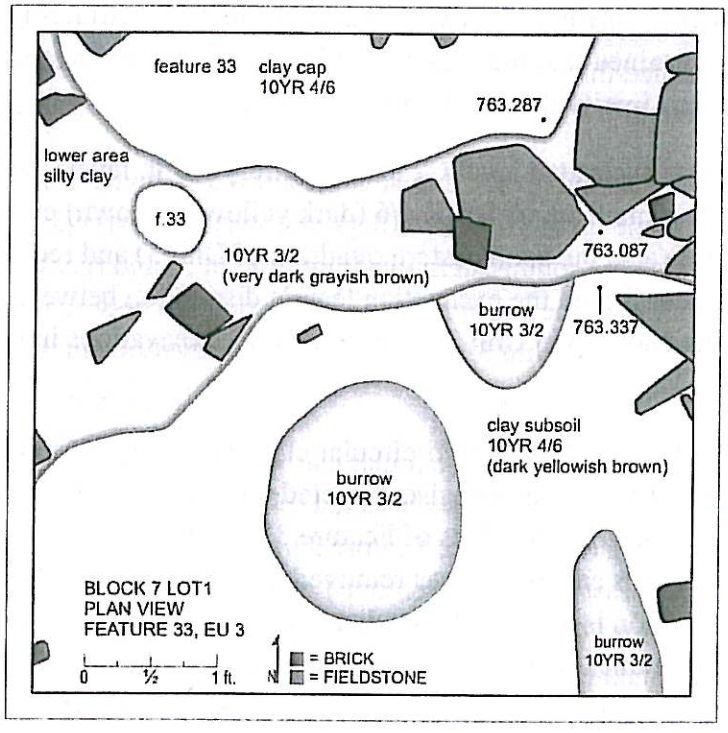

Figure 4.8. Plan view diagram of Feature 33 in Excavation Unit 3 (Image by Christopher Valvano).

Feature 33 is located in the north half of Unit 3. It presumably extends to an unknown distance in the unexcavated area beyond Unit 3. Feature 33's halves were completely removed in one level to expose the basin-shaped organic fill of Feature 34. Archaeologists interpret Feature 33 as a clay cap intentionally placed above the organic 10YR 3/2 (very dark grayish brown) silty-clay fill of Feature 34.

Feature 34. Feature 34 is a semi-circular dark organic fill completely underneath Feature 33 (Figs. 4.5, 4.7, 4.8). Archaeologists bisected this feature and excavated separate levels with separate bag numbers. Both halves of Feature 34 are made up of 10YR 3/2 (very dark grayish brown) silty clay. Feature 34's east bisect was removed as a single level a1-east. Level a1-east's average opening elevation is 763.174 ft. amsl, and its average closing elevation is 762.759 ft. amsl (0.415 ft. average thickness). This level exposed a continuation of the flat fieldstones chinked with mortar partially exposed by level B4. It also contained architectural debris, one bone, and a circa 1860 Federal military button made by Scovill Manufacturing Company (Fig. 4.9). Level a1-west's average opening elevation is 763.271 ft. amsl, and its average closing elevation is 762.854 ft. amsl (0.417 ft. average thickness). The layer showed an abrupt end to the fieldstones just to the west of the bisect line. The layer yielded architectural debris including tar paper and wood. Other pebble-sized artifacts such as glass, ceramic, slag, and nails were recovered.

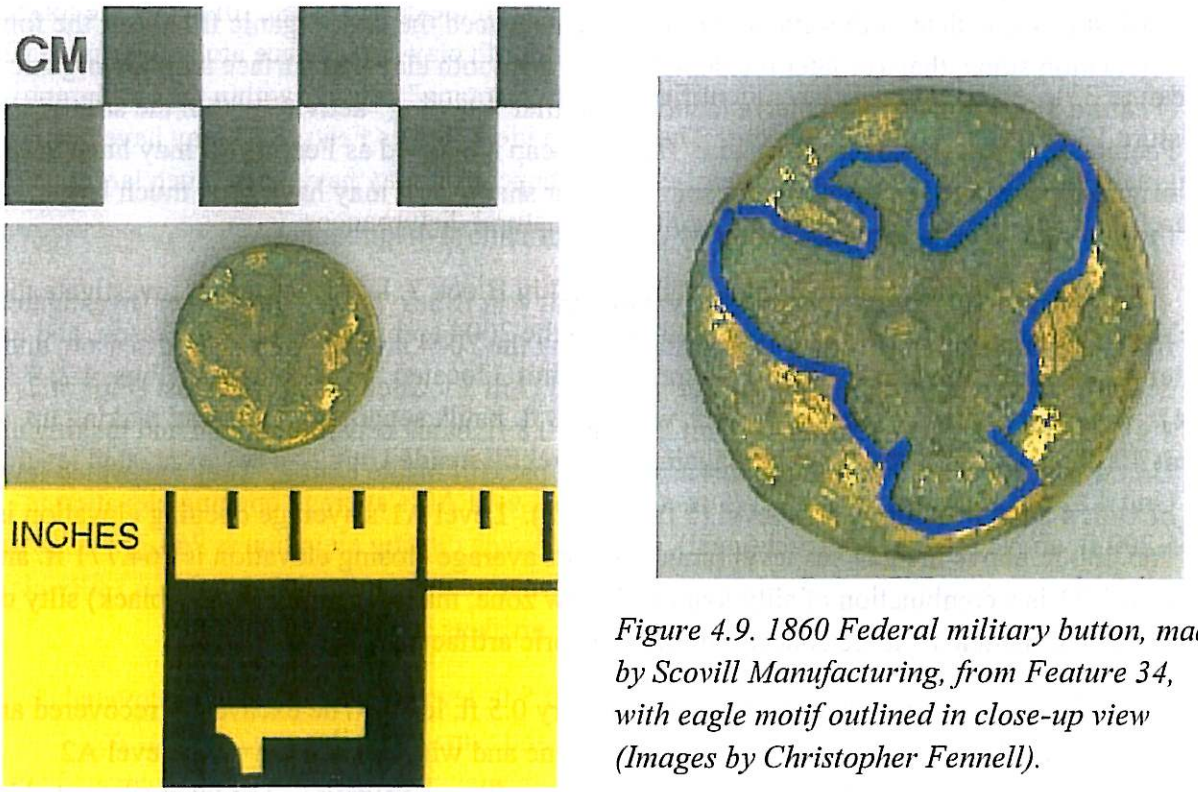

Figure 4.9. 1860 Federal military button, made by Scovill Manufacturing, from Feature 34, with eagle motif outlined in close-up view (Images by Christopher Fennell).

Feature 34 is located in the north half of Unit 3. It presumably extends to an unknown distance in the unexcavated area beyond Unit 3. Archaeologists cannot confidently distinguish Feature 34's fill from the similar fill found in levels B3-B4. Nor can they confidently state that the semi-circular shape of Features 33 and 34 is not the result of post-depositional disturbance. Feature 34 might be related directly to the shape of Feature 33 from a single depositional event; however, the visible semi-circular shape might be a product of multiple undetected historic events.

One can infer a formation scenario for the creation of both features. The configurations of these features suggest that the southern half of Unit 3 (made up of levels C1-C2) reflect the historic excavation of subsoil to prepare an area for laying a stone foundation. The flat fieldstones chinked with mortar in Unit 3's northwest corner might be the remnants of this foundation, even though their northern distance from C1-C2 suggests an unusually large builders' trench compared with those identified for Features 16, 17, and 21 in Block 3 of the town site and nearby in Feature 37 in Block 7. Future excavations could determine the presence of additional courses below these exposed fieldstones in Unit 3. At some point after 1860, residents of the lot either modified or abandoned the structure and placed the dark organic fill (B3-B4) over the former foundation. The circa 1860 Federal military button made by Scovill manufacturing company found vertically between the fieldstone and Feature 33 should mark the earliest possible date of this event. Once residents placed the dark organic fill above the former foundation stone, they (or later residents) placed a smooth clay-cap surface atop the organic fill (Feature 33). Archaeologists have identified similar "capping" activity within the stratigraphy of Feature 13 in Block 4 of the town site. The clay cap identified as Feature 33 may have been originally deposited in the observed semi-circular shape, or it may have been much larger, thereby reflecting later modification by cultural or natural disturbances.

Archaeologists excavated Excavation Unit 4 in Block 7, Lot 1, to further investigate the fieldstone foundation (Feature 3) identified during the 2004 archaeological field season, and to determine the relationship between Feature 3 and Unit 3 located to the southeast (Figs. 4.2, 4.3, 4.4). Unit 4 is located adjacent to Unit 2, with a 0.8 ft. baulk separating them and making up Unit 4's west wall to provide support against the backfill inside Unit 2. They excavated level A1 of Unit 4 as an arbitrary 0.5 ft. level (5 ft. x 4.2 ft.). Level A1's average opening elevation is 765.200 ft. above median sea level (amsl), and its average closing elevation is 764.771 ft. amsl. Level A1 is a combination of silty loam and plow zone, made up of 10YR 2/1 (black) silty clay loam, and included a large concentration of historic artifacts.

Team X excavated level A2 as an arbitrary 0.5 ft. level. The excavators recovered an abundance of flat glass (n=101) as well as machine and wire-cut nails (n=67). Level A2 produced the first signs of underlying rubble from a former structure. The team excavated level A3 as an arbitrary 0.5 ft. level. Because level A3 contains soil nearly identical to its overlying

levels but exists at depth beyond the reach of historic plows, team members describe this level as sub-plow zone with extensive boulder- to cobble-sized fieldstone rubble. It is made up of 10YR 3/1 (very dark gray) silty clay. Excavators recovered historic period materials throughout this level, including a 1930 U.S. penny. Team X excavated level A4 as a 0.37 ft. natural level to a depth 1.8 ft. below ground surface. Level A4's average opening elevation is 763.961 ft. amsl, and its average closing elevation is 763.596 ft. amsl. Level A4 is sub-plow zone with extensive boulder- to cobble-sized fieldstone rubble, and a matrix of 10YR 4/2 (dark grayish brown) silty clay. The team ended this level at a natural floor of compacted soil with heavy concentrations of architectural debris consisting mainly of fieldstone and white mortar fragments. Historic artifacts were pronounced, but less abundant than in higher levels.

The team excavated level B1 as an arbitrary 0.5 ft. level into the compact soil within the fieldstone rubble. Team X describes level B1 as possible foundation fill because they anticipated, but could not confirm, this soil as fill from an historic-period structure. Level B1 contains extensive boulder- to cobble-sized fieldstone rubble with a matrix of 10YR 4/2 (dark grayish brown) silty clay. The level yielded historic artifacts, including streaks of a red mineral compound likely comprising a residue of paint or similar pigment (7.5 YR 4/8 (red)). Archaeologists excavated level B2 as an arbitrary 0.5 ft. level into the compact soil within the fieldstone rubble. Level B2 is possible foundation fill with extensive boulder- to cobble-sized fieldstone rubble and a matrix of 10YR 4/2 (dark grayish brown) silty clay. At level bottom, excavators found three flat fieldstones chinked with mortar in the southwestern quadrant of Unit 4. These stones lie 2.45 ft. below ground surface and are similar in composition and shape to the overlying rubble. They are, however, nearly half as large as those found in the rubble (approximately 1.0 ft. versus 1.7 ft. maximum length). This level yielded historic artifacts, including an 1889 U.S. penny. Archaeologists excavated level B3 as a "floor scraping" level of less than 0.1 ft. Level B3's matrix is identical to level B2 and was excavated to provide a continuous, even floor between Unit 4 and Unit 5, which is located directly north (Fig. 4.5). Team X recovered 12 historic artifacts from this level. Excavations in this unit were halted to open an adjoining Unit 5 directly to the north.

Excavators opened Unit 5 adjacent to the north side of Unit 4 to further investigate these residential foundation remains (Figs. 4.4, 4.5). They excavated level A1 as an arbitrary 0.5 ft. level, with an average opening elevation is 765.206 ft. Level A1 is a combination of silty loam and plow zone, made up of 10YR 3/2 (very dark grayish brown) silty clay loam, and included a large concentration of historic period artifacts. Archaeologists excavated level A2 as an arbitrary 0.5 ft. level, and recovered an abundance of container and flat glass (n=101) as well as machine and wire-cut nails (n=90). The level also produced the first signs of underlying rubble from a former structural foundation. Team X excavated level A3 as an arbitrary 0.5 ft. level. Because level A3 contains soil nearly identical to its overlying levels but exists at depth beyond the reach of historic plows, the excavators describe this level as sub-plow zone with extensive boulder- to

cobble-sized fieldstone rubble. It is made up of 10YR 3/2 (very dark grayish brown) silty clay, and the team recovered historic artifacts throughout the level.

The archaeologists excavated level B1 as an arbitrary 0.5 ft. level into the compact soil within the fieldstone rubble. Team members describe level B1 as possible foundation fill because they anticipated, but could not confirm, this soil as fill from an historic-period foundation. Level B1 contains extensive boulder- to cobble-sized fieldstone rubble with a matrix of 10YR 2/2 (very dark brown) silty clay. Excavators identified a line of three flat fieldstones chinked with mortar 2.0 ft. below ground surface in the northwest quadrant of Unit 5. A possible builder's trench touches the stones' western edges (Fig. 4.5). This soil is mottled, made up of 60% 10YR 2/2 (very dark brown) and 40% 10YR 4/6 (dark yellowish brown) silty clay. The stones chinked with mortar were later identified as the western side or wall of Feature 37 (Figs. 4.5, 4.10). Team X recovered historic materials throughout level B1, broadly dating from the last half of nineteenth century to the early twentieth century. Among the later-dated objects was a curved and beaded hair comb. The comb's material is a type of plastic manufactured since the 1930s. Archaeologists excavated level B2 as a "floor scraping" level of less than 0.1 ft. Level B2's matrix is identical to level B1 and was excavated to provide a continuous, even floor between Unit 5 and Unit 4. The team identified heavy concentrations of mortar and clinker/slag in center portion of Unit 5, and recovered 54 historic artifacts, all of which were fragmented.

Team X excavated level B3 as an arbitrary 0.5 ft. level. Level B3's average opening elevation is 762.910 ft. amsl, and it consists of possible foundation fill with extensive boulder- to cobble-sized fieldstone rubble. Its matrix is made up of 10YR 2/2 (very dark brown) silty clay. Excavators did not remove any stones identified as Feature 37 (i.e., stones laying flat and chinked with mortar) (Figs. 4.5, 4.10). Level B3 produced an abundance of architectural artifacts as well as domestic items like a hard rubber mangle (or roller) from a hand-operated washing machine and an ironstone bowl marked "Helen" dating to 1903. The level also showed a second and third course of stones below the ones identified in level B1 (Figs. 4.10, 4.11).

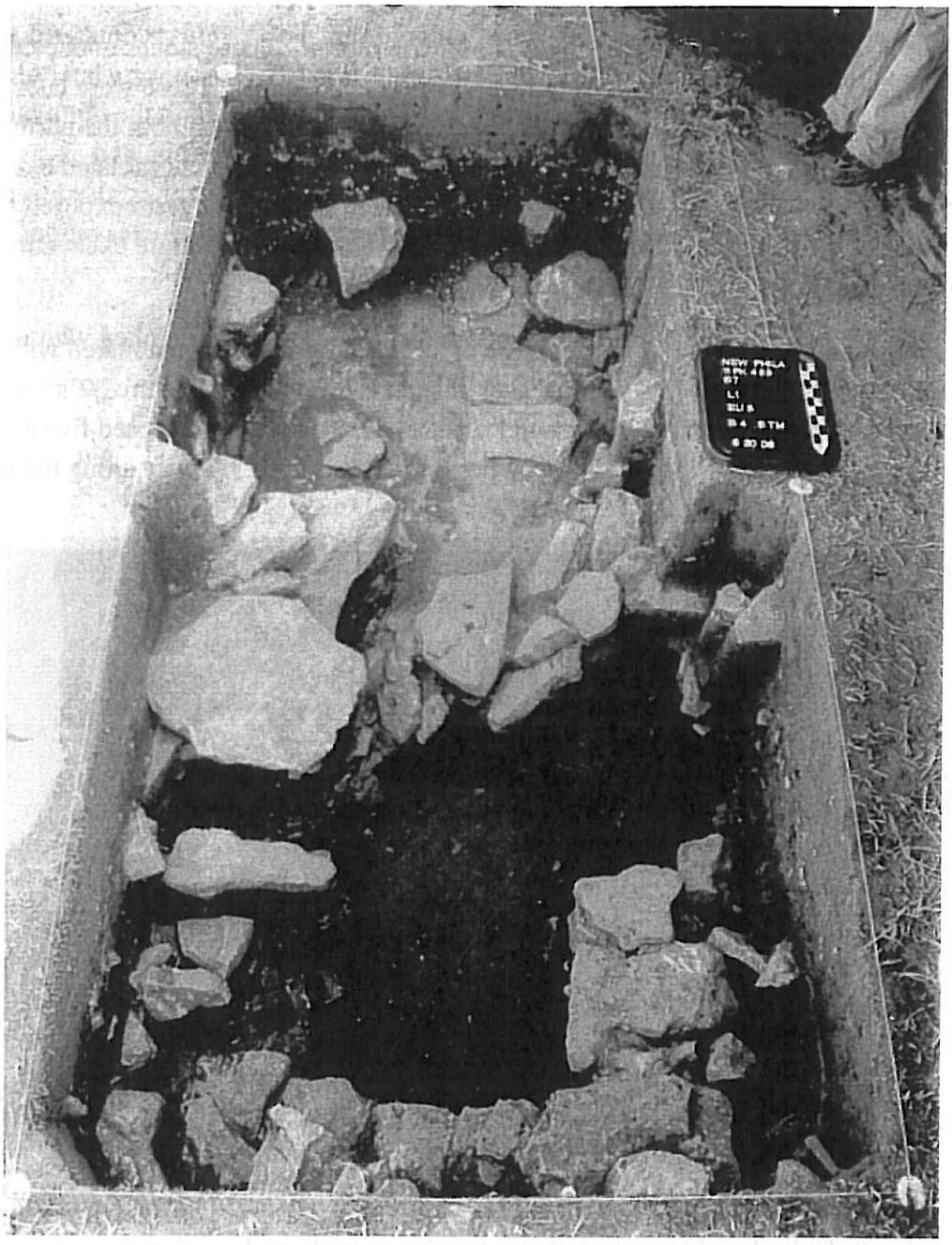

Figure 4.10. View of Excavation Units 4 and 5 looking from north to south, with Unit 4 (top, south) and Unit 5 (bottom, north), and Feature 37 fieldstone foundation segment along north, east, and west edges of Unit 5 (Photograph by Christopher Valvano).

Archaeologists excavated level B4 as an arbitrary 0.5 ft. level. Level B4 likely consists of foundation fill with less of the boulder- to cobble-sized fieldstone rubble than were present in previous levels. Its matrix is made up of 10YR 2/2 (very dark brown) silty clay. Team members did not remove any stones identified as Feature 37. At 2.60 ft. below ground surface, they

identified a second line of flat fieldstones chink with mortar. These stones connected and formed a right angle with the stones detected in level B1 (Figs. 4.5, 4.10). These were later identified as part of Feature 37. Level B4 exposed two lower courses of stones on both the north and west sides of Feature 37. Time constraints and the end of the field season terminated excavations in Unit 5 before the lowest fieldstone course was detected. In total, the team exposed five courses on the west side of Feature 37 and three courses on the north side. Future excavations could identify the maximum depth of Feature 37's bottom course.

Feature 37. Feature 37 is the corner of a fieldstone foundation chinked with mortar. Archaeologists first detected its western side in level B2 of Unit 5. Feature 37's west side is located approximately 2.0 ft. below ground surface. Archaeologists exposed five courses of fieldstones. This side of Feature 37 also appears to end abruptly midway along the western edge

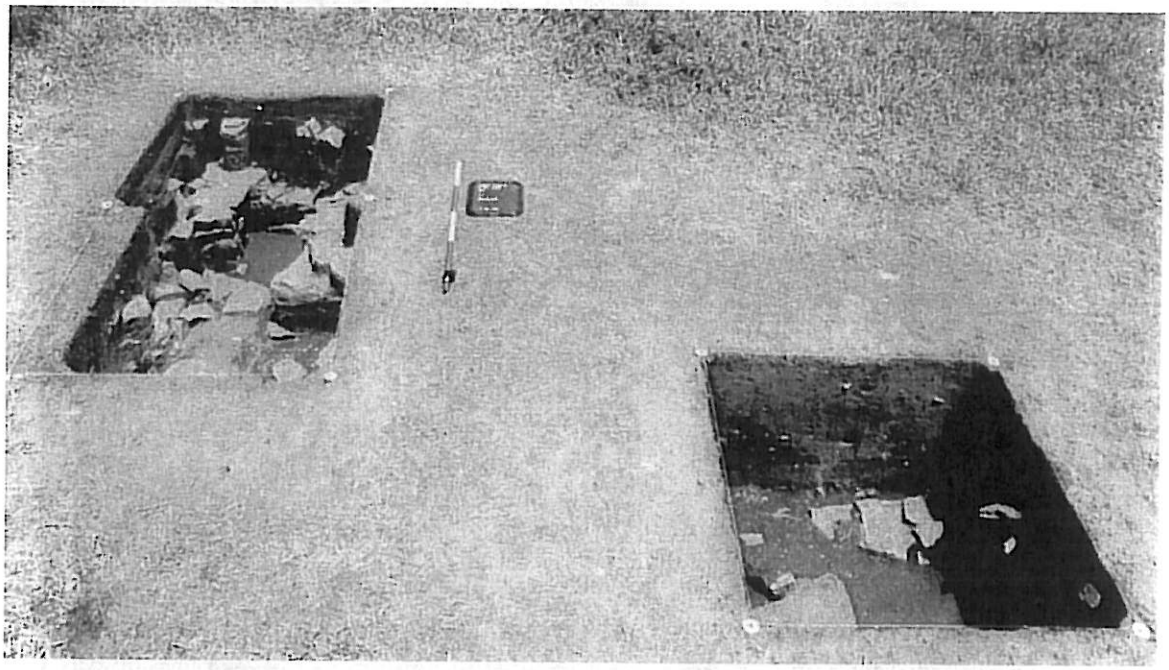

Figure 4.11. View of Excavation Units 3-5, looking north, with Unit 3 on right (east), Units 4 and 5 on the left (west), with multiple and overlapping courses of successive fieldstone foundation assemblies, including Feature 37 (top left) (Photograph by Christopher Valvano).

of Unit 5. The upper-most stones were fully exposed showing a soil transition along the western edge to a mottled soil interpreted as a builders' trench. Feature 37's north side is located approximately 2.60 ft. below ground surface. Archaeologists exposed four courses of fieldstones. This side runs directly into the eastern wall of Unit 5. The north wall of Unit 5 partially covers Feature 37's north side obscuring evidence of a builder's trench (Figs. 4.5, 4.11). Given the depth of these additional and offsetting courses of foundation walls in Units 4 and 5, it is very likely that this location in Block 7, Lot 1 contained an earlier occupation that predated the

1870s and later residential site of which Feature 3 was a part. In addition to Feature 37, Features 33 and 34 in nearby Unit 3 both are associated with artifacts that date as early as the 1840s (Fig. 4.10).

These archaeological remains can be interpreted in the context of our expanded body of documentary evidence, including tax, deed, and census records. Examining these multiple lines of evidence, it appears that James Pottle's household likely purchased this lot from Frank McWorter in 1848 when a residential structure was already present on the parcel. Members of the Pottle family, or some other family, likely leased the parcel from McWorter before 1848 and constructed that home. Alternatively, that house may have been constructed by members of the McWorter family before the 1848 sale.

Chapter 5
Block 8, Lots 1-2
Searching for the African-American School House

(Last updated: Nov. 25, 2008)

In the early decades of New Philadelphia, Illinois law did not provide for the education of the children of African-American residents of the state. To overcome this racial bias in the state law and related public funding, Frank McWorter and residents of New Philadelphia worked to provide a school house for educating the African-American children of the town in the 1850s and 1860s. They may have done so by subverting the existing laws and channeling the resources for a township-supported school house facility for this unauthorized purpose.

For many small towns in the nineteenth century, the school house served as an important focus of community life. The neighborhood's children would gather there for lessons, to be sure, but the building could also serve as a public space for meetings and social gatherings, particularly in a town without its own church. However, in a community like New Philadelphia, with residents of different races, the school house *could* be a site where segregation and internal divisions were more clearly manifested.

The laws of the state of Illinois specified that school funds be apportioned according to the number of "white" school-age children in a given district. Over the years there were several attempts to divert taxes paid by African-American residents of the state to the schooling of "black" children, but these were largely unsuccessful (McCaul 1987). Educational historian Robert McCaul estimates that only 10% of black children were in public school at mid-century, whereas the figure for white children was closer to 80% (McCaul 1987:46).

In 1847, "sundry" citizens of Pike County petitioned that the free-schools law be amended so that "the black and colored children of our State may have an equal benefit of the money appropriated by law to school purposes, or so amend the law as to exempt the property of blacks" (McCaul 1987:37). The Illinois General Assembly was not moved. Given these circumstances, it is no surprise that Frank McWorter together with other members of his family attempted to establish a school that would serve the African-American children of New Philadelphia. As historian Juliet Walker notes, in 1848 Frank McWorter was arranging for the development of the Free Will Baptist Seminary to serve as a school and church for the town. The decision seems prescient on his part, as a year later the Illinois General Assembly affirmed the exclusion of black children from state-sponsored schools (Walker 1983:136). Court records from 1851 suggest that McWorter rented an existing school house for the education of New Philadelphia's black children (Walker 1983:145; *Frank McWorter vs. C.S. Luce and D. C. Topping* (1851) case no. 3787). Such private efforts by free people of color to provide schooling opportunities for themselves and their children were typical of mid-century educational activism (Agbe-Davies 2002).

As for evidence of the location of a school used by the African Americans of New Philadelphia, former resident Larry Burdick (1992) described a square within the town site bounded by Broad Way, Main, Ann, and King Streets (i.e., Block 8), further stating that "it

originally had two schools, one black school and one white school." Note that Burdick's (1992) account does not specify whether the "two schools" were facing the square (possibly in Block 9) or within it (in Block 8). Several other sources placed a school on the east side of the town's square or park (i.e., in Block 9). These factors led archaeologists to believe that perhaps Matteson's (1964) analysis placed the nineteenth century school house slightly south of its actual location, and that the search should commence with Block 9, Lot 4, which was a parcel associated with the Kimbrew family.

We had previously followed such oral history accounts and searched for remains of this school house in the area of Block 9, Lot 4, in our 2005 field work (Shackel et al. 2006, chap. 3E). The earliest records associated with Block 9, Lot 4, indicated that Anson Grey owned the parcel and had no improvements on the lot in 1867. In 1884 Grey sold the lot to George Kimbrew and M. Kimbrew, who then held the parcel until 1909. Oral history accounts of the town indicate that the "negro schoolhouse" was located on this lot until about 1872 (Burdick 1992; Matteson 1964). When the Kimbrews acquired the lot and the school house, they reportedly partitioned the building, creating a duplex house, with each brother living in one section. Martin "Kinebra" appears in the Hadley County Tax Records of 1888 for Block 9, Lot 4, but nowhere else in the town.

Surveys and excavations in 2005 located the remains of a stone footer, or "pier," for a structural support in Lot 4, which archaeologists labeled as Feature 6. However, this limited foundation fragment provided inconclusive proof of a possible location of such a school house. A wood frame structure, recalled by Burdick (1992) as located on Block 9, was sketched by him and is not dissimilar in appearance from many school buildings of the period, with a gable-ended entrance. Such a structure might have sat lightly on the landscape and its presence easily erased by demolition and later disturbance of the archaeological record. The only trace might be a large number of nails in the plow zone. Interestingly, an abundance of nails were recovered during the surface collection survey of 2002 in the southern portion of Block 9, Lot 4 (Shackel et al. 2006:3E:2).

Another line of evidence that provided some indications of where the school house may have been located was uncovered in deed provisions. Survey and excavations in 2008 focused on the southern half of Block 8, Lots 1 and 2, for which a number of deed references indicate a school house for African-American families may have been located in the 1850s and 1860s. For example, on December 15, 1860, Elizabeth Kellum sold Lots 1 and 2 of Block 8 to Sarah McWorter for $200, "with the exception of Twenty (20) feet East and (21) Twenty one feet within the South west corner of lot No One (1) in Block No Eight (8)" (Pike County Deed Records, Deed Books [PCDR], Vol. 59, p. 237). Figure 5.1 provides an excerpt of a deed recording an earlier sale in 1858 by John and Agnes Kellum of the same land and repeats this reservation of the parcel for use as a school house location (PCDR, Vol. 55, p. 49). This line of documentary evidence is discussed further below.

The work of investigating the possible location of school house remains in Block 8 was undertaken in our 2008 field season by a group of geophysicists and archaeologists affiliated with the "Time Team America" documentary program. PBS and Oregon Public Broadcasting announced in early 2008 the start of this program of archaeological investigations reported to

broad audiences through documentary film episodes. Based on a long-running and highly successful program in the United Kingdom, the Time Team America approach challenges a collaborative group of historians, geophysicists, and archaeologists to spend three working days to answer some puzzle concerning a specific archaeology site. The Time Team group will often work with a long-term archaeology project, like New Philadelphia, and apply the same protocols and standards of practice as the academic archaeologists in addressing such a particular question at the site (PBS 2008).

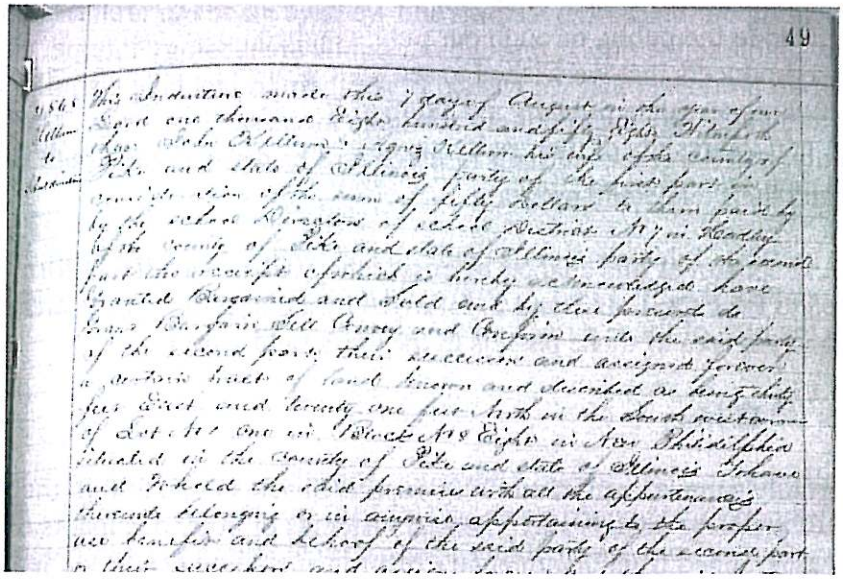
49

Figure 5.1. Excerpt of 1858 Deed (PCDR, Vol. 55, p. 49).

In early 2008, Dr. Anna Agbe-Davies reported to the New Philadelphia Association and others on the New Philadelphia research team that the Time Team program had expressed an interest in undertaking archaeological research and filming an episode at the site of the town founded by Frank McWorter. Members of the local and descendant communities and our research team were very enthusiastic about this opportunity. The Time Team program in the United Kingdom has an excellent reputation for employing rigorous, scientific methods, and in educating large-scale, public audiences in the techniques and results of archaeological and historical research.

We communicated to the producers of Time Team, including director Graham Dixon, that such a project by their organization at New Philadelphia would greatly benefit from taking an approach consistent with the context of our past work and the status of the town site on the National Register of Historic Places. We wanted to see Time Team approach any archaeology project at New Philadelphia in a way that maintained the archaeological integrity of the town site. When conducting excavations under the NSF-REU program, for example, we have limited excavations to the bisecting of cultural features, so that we always leave one half of each cultural feature intact in order to maintain the archaeological integrity of the town site. The Illinois State Museum (ISM) is the designated organization for curating all archaeological, faunal, and floral remains from the New Philadelphia town site, and we communicated that all data obtained by a Time Team project should also be curated by ISM. The Time Team organizers agreed entirely

with all these recommendations, which were consistent with the overall approaches the program had taken at other sites as well.

As researchers for the NSF-REU supported project, we had also approached the New Philadelphia Archaeology Project in a process of civic engagement, and we consulted regularly with members of the descendant and local communities on their views for the goals of the archaeological and historical research. We have been as transparent as possible in formulating and communicating our research questions and we have made our archaeological and historical data readily available to the public through our public archaeology internet sites. We expressed to the Time Team producers that we wished to see their project take a similar approach, with a commitment to making any data publicly available in the same manner. They again agreed whole-heartedly, and the results of their research will be disseminated both through their internet publications and their television program.

The next section of this chapter discusses the evidence available form documentary sources related to Block 8, Lots 1 and 2, followed by a discussion of the archaeological investigations in the area of those parcels in the 2008 field season.

Block 8, Lots 1-2 History

As partially summarized in our 2006 report (Shackel et al. 2006), the following data concerning past property owners and potential residents or other occupants of Block 8, Lots 1 and 2, can be ascertained from documentary records, including deeds, tax ledgers, and census lists.

Frank McWorter sold Block 8, Lots 1-2 to Christopher S. Luce in 1840. C. S. Luce was listed in the 1850 Federal Census as a Baptist preacher born in Maine. His wife Sally was born in New Hampshire. His oldest son is listed as 15 years old and a farmer who was born in Maine. Their youngest son, Moses, is listed as 8 years of age, and was born in Illinois, most probably in New Philadelphia. All of the family members are listed as white.

After 1857, the land was sold about a dozen times to people that included the Kellums, Sarah McWorter, A. B. Cobb, Judith Armistead, James McKinney, William Butler and Irene Butler Brown. Clarissa Arnold owned the property in 1857. The household of Calvin Arnold is listed in the 1855 State Census for New Philadelphia, with 6 people in the household and Calvin listed as white. Clarissa may have been a member of that household. John Kellum, who purchased the property in 1857 from Clarissa Arnold, is also listed in the 1855 State Census for the town, with 3 people in his household, and he is listed as white. John conveyed the property to Elizabeth Kellum in 1859, and Elizabeth conveyed the property to Sarah McWorter the next year. Sarah conveyed some form of interest in the property to A.B. Cobb in 1860, but Sarah remained responsible for tax payments on the property listed for 1867 and 1868, according to the Hadley Township Tax Assessments. A. B. Cobb owned the property in 1870, when he conveyed it to Alexander Baird, and Cobb was listed as responsible for taxes on the property during that same year.

In the 1860 census, Cobb was listed as a white Physician from New York. His wife Emily was from Illinois and was listed with the occupation of keeping house. The entire Cobb family of 5 is listed in the census as white. In the 1865 State Census, Cobb is listed as white with 6 family members. The 1870 Federal Census lists Arden Cobb at 38 years of age with his wife Laura, who is 35 years old. There were 5 children in the household.

The Hadley Township Tax Assessments indicate that during Sarah McWorter's ownership of the property it was assessed for $8 in 1867. A structure was built on the land the following year as evident in the fact that McWorter was assessed for $100 of improvements for Lots 1 and 2. A. B. Cobb was assessed the same amount for the property in 1869, and then assessed only $35 in 1870. From 1871 through 1878 Alexander Baird was assessed for improvements. In the 1880s, the McKinneys owned the property. The value of the property was generally constant and increased somewhat in the 1870s. By 1888 the assessed value decreased to $75. Based on this information, it appears that a structure stood on either Lot 1 or Lot 2 by 1868. A geophysical survey conducted by Michael Hargrave in 2005 indicated that anomaly A43 located on the northern edge of Block 8, Lot 2, likely represents the remains of the structure. Based on the archeological evidence it was probably built in the 1850s and dismantled by the early 1870s.

The deed, census, and tax data related to Block 8, Lots 1-2 follow. The names italicized are those who may have occupied some portion of these lots since they appear in both the deed and the census data.

DEED TRANSACTIONS

Year	*Seller*	*Purchaser*	*Reference (page, line)*
1840	Frank McWorter	*Christopher Luce*	54, 1
1857	Clarissa Arnold	John Kellum	54, 4
1857	Clarissa Arnold	*John Kellum*	54, 4
1859	*John Kellum*	Elizabeth Kellum	54, 6
1860	Elizabeth Kellum	*Sarah McWorter*	54, 7
1860	*Sarah McWorter*	*A. B. Cobb*	54, 12
1870	*A. B. Cobb*	Alex Baird	54, 13
1874	Alexander Baird	Cordelia Racy	54, 11
1876	Judith Armstead	Solomon McWorter	54, 14
1881	N. V. Hadsell	William McKinney	54, 21
1887	William McKinney	James McKinney	54, 23
1902	James McKinney	William Butler	54, 25
1911	William Butler	Alonzo Leonard	54, 26
1919	William Butler	John Siegle	54, 33
1924	William Butler	John Siegle	54, 34
1927	Irene B. Brown	John Siegle	54, 36
1928	John Siegle	William Butler	54, 37
1930	Emma Siegle	Virgil Burdick	54, 39

HADLEY TOWNSHIP RECORDS

Year	*Name Assessed*	*Value of Lot*	*Improvements*	*Total*

1867	Sarah McWorter	$3.00	$5.00	8.00
1868	Sarah McWorter (Lots 1 & 2)	10.00	100.00	110.00
1869	A. B. Cobb (Lots 1 & 2)	10.00	100.00	110.00
1870	A. B. Cobb (Lots 1 & 2)	00.00	35.00	35.00
1871	Alexander Baird (Lots 1 & 2)	00.00	100.00	100.00
1872	Alexander Baird (Lots 1 & 2)	10.00	90.00	100.00
1875	Alexander Baird (Lots 1 & 2)	00.00	blank	200.00
1878	Alexander Baird & Cordelia Racy (Lots 1 & 2)	00.00	150.00	150.00
1883	W.D. McKinney (Lots 1 & 2)	00.00	125.00	125.00
1888	James McKinney (Lots 1 & 2)	00.00	75.00	75.00

1850 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Luce	C. S.	45	M	W	Bapt. Preacher	ME
	Sally P.	41	F	W	Blank	NH
	George D.B.	15	M	W	Farmer	ME
	Moses A.	8	M	W	Blank	IL

1855 STATE CENSUS

NAME	FIRST NAME	RACE	NO. IN HOUSEHOLD
Kellum	John	W	3
Arnold	Calvin	W	6

1860 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Cobb	Arden	31	M	W	Physician	NY
	Emily	20	F	W	Housework	IL
	Wilbur	6	M	W	Blank	IL
	David	3	M	W	Blank	IL
	Albert	1	M	W	Blank	IL

1865 STATE CENSUS

NAME	FIRST NAME	RACE	NO. IN HOUSEHOLD
Kellum	E.	W	3
Cobb	A. B.	W	6
McWorter	S.	B	5

1870 FEDERAL CENSUS

NAME	FIRST NAME	AGE	SEX	RACE	OCCUPATION	ORIGIN
Cobb	A. B.	38	M	W	Physician	NY
	Laura	35	F	W	Keeping house	IL
	Wilber	15	M	W	At home	IL
	Laura	13	F	W	Blank	IL
	Albert	9	M	W	Blank	IL
	Francis	6	F	W	Blank	IL

Evidence supporting a plan to look for the school house remains on Block 8 came from such documentary sources, particularly the deeds. In 1858, John and Agnes Kellum sold a 30 ft. (E-W) by 21 ft. (N-S) portion in the southwest corner of Block 8, Lot 1 to "the school Directors of school District No. 7 in Hadley of the county of Pike." A series of deed records concerning transfers of these lots over a number of decades includes such descriptions of a portion of the land being reserved for use as a school house location. John and Agnes Kellum had purchased Lots 1 and 2 from Clarissa Arnold in February, 1857. Their 1858 deed of transfer (PCDR, Vol. 55, p. 49) provided in part as follows:

> This Indenture made this 7 day of August in the year of our Lord one thousand Eight hundred and fifty Eight, Witnessth that John Kellum & Agnez [sic] Kellum his wife of the county of Pike and state of Illinois, party of the first part in consideration of the sum of fifty Dollars to them paid by the school Directors of school District No. 7 in Hadley of the county of Pike and state of Illinois party of the second part the receipt of which is hereby acknowledged have Granted Bargained and Sold and by these presents do Grant Bargain Sell Convey and Confirm unto the said party of the second part, their successors and assigned forever a certain tract of land known and described as being thirty feet East and twenty one feet North in the South west corner of Lot No 1 one in Block No 8 Eight in New Philadelphia situated in the county of Pike and state of Illinois.

Historian Claire Martin compiled the following account of the subsequent transactions concerning Block 8, Lots 1 and 2 during the nineteenth century, most of which reserved portions of the land for use in hosting a school house. None of these deed provisions expressly stated that a school house had been constructed on either of those lots; the deed entries instead make references to a portion of the land as a "school house lot" or dedicated "for school house" use.

On October 12, 1859, the Kellum family sold Lots 1 and 2 to John Kellum's mother Elizabeth for $325, making no mention of reserving any portion for the location of a school house (PCDR, Vol. 57, p. 363). On December 15, 1860, Elizabeth Kellum sold Lots 1 and 2 to Sarah McWorter for $200, "with the exception of Twenty (20) feet East and (21) Twenty one feet within the South west corner of lot No One (1) in Block No Eight (8)" (PCDR, Vol. 59, p. 237). On October 15, 1860, Sarah McWorter sold Lots 1 and 2 to A. B. Cobb for $200, and the deed made no mention of a school tract (PCDR, Vol. 89, p. 223). These deed records were not filed until 1874, which likely accounts for the chronological discrepancies between transactions. A. B. and Laura Cobb sold the lots to Alexander Beard/Baird for $250 on November 7, 1870; there was no mention in the deed record concerning a school tract (PCDR, Vol. 89, p. 224). On October 12, 1874, Alexander and Mary Beard sold the lots to Cordelia Racy, "except twenty one (21) feet by thirty (30) out of the South West corner for School house" (PCDR, Vol. 87, p. 130).

On November 21, 1881, the executor of Cordelia Racy's estate sold the lots for $125 to William D. McKinney, "excepting a school House lot in the South West Corner 21 by 30 feet" (PCDR, Vol. 101, p. 299). On May 10, 1887, William McKinney sold Lots 1 and 2 to James McKinney for $75, "excepting a School House lot in the South West corner 21 by 30 feet"

(PCDR, Vol. 113, p. 266). On October 22, 1902, James McKinney sold Lots 1, 2, 7 and 8 in Block 8 to William Butler for $80, but the deed of transfer made no mention of a school house portion (PCDR, Vol. 147, p. 123).

One can combine these points of evidence from deed entries with additional data from census and tax records. The first owner of Block 8, Lots 1 and 2 following the patenting of the town was Christopher Luce. He purchased these lots in 1840 and was shown living in Hadley Township in 1850 with his wife Sally and two sons, one a farmer of 15. The three elder Luces were born in New England, the youngest (age 8) in Illinois. All were designated "white" on the U.S. census. Luce was a Baptist preacher and had contracted with Frank McWorter to build the Baptist seminary that the latter envisioned for the town. Luce did not fulfill his contract, leading to a lawsuit in 1851 (Walker 1983:138-139). No subsequent censuses include Luces in Hadley Township.

William Kellum was the next seller/purchaser to appear in the census. He, his wife Elizabeth, their two adult daughters and three young sons (17-5) are all classed as "white." He and his eldest son are listed as farmers. William and Elizabeth had moved at least twice, having been born in the northeast, their older children born in Ohio, and their youngest born in Illinois. By 1860, Elizabeth appeared to be a widow, as she headed the household that included an adult daughter, three sons of farming age, and two smaller boys born since the last census. Elizabeth Kellum sold the lot back to the McWorter family in that year, to another female head of household, Sarah McWorter. Sarah, a "mulatto" woman well into her thirties, appeared in the 1850 census in a household that included her father and mother and at least two of her children, an adult daughter and a young girl. Likewise in 1860, her mother was the head of the household that included Sarah. In 1870 she appeared have taken over the household at age 60.

Andrew Cobb purchased the lot from Sarah McWorter in 1860, the same year in which she purchased it, suggesting it was an investment rather than a residence for her. The Cobb family was headed by Andrew, a physician from the Northeast. His wife Emily, along with their three small boys, was born in Illinois. They appeared in the 1860 census as "white." In 1870, the year Andrew Cobb sold the lot, the family included two of the previously-listed children as well as an older girl (13) and a little boy. The new Mrs. Cobb (Laura) apparently brought at least one child to the marriage.

Alexander Baird, who purchased the lot from Andrew Cobb in 1870 does not appear in the census for that year. However, given his age and birthplace as listed in the 1880 census, it is likely he was the son of other Bairds who resided in Hadley Township in 1860. In 1870, he would have been 31. His son listed in 1880 would have been five in 1870, but it is not clear to whom Alexander was married when he purchased the land, or sold it in 1874 -- to his son's mother or to the woman who was his wife in 1880, Mary Baird. All of the members of the Baird family were listed as "white." Alexander was a painter.

Cordelia Racy purchased the lot from Alexander Baird. Several Racys appeared in the 1850 census. Cordelia appeared only in the census of 1880, when she was a middle-aged widow, and the head of a household that included only her disabled adult son. They were both listed as

"white." She was born in the northeast, he was a native Illinoisan. She bought the lot six years prior to that census.

Immediately south of Block 8, Lots 1 and 2, lies Lot 8 of that block (Fig. 5.2). One can also examine evidence concerning this neighboring parcel for further contextual leads on the precise history of Lots 1 and 2. The following table provides the history of land transactions concerning that neighboring tract, followed by a discussion of additional data from census and tax records.

Block	*Lot*	*Year*	*Seller*	*Purchaser*	*Reference (page, line)*
8	8	1853	Sarah Hull	David Green	54, 2
8	8	1871	James Vokes	Solomon McWorter	54, 9
8	8	1872	Lucy McWorter	Solomon McWorter	54, 8
8	8	1876	Sarah McWorter	Solomon McWorter	54, 10
8	8	1876	Judith Armstead	Solomon McWorter	54, 14
8	8	1876	Lucy Vond	Solomon McWorter	54, 17
8	8	1876	John Johnson	Solomon McWorter	54, 18
8	8	1878	Solomon McWorter	William Bower	54, 16
8	8	1879	James Bower	Frederick Shipman	54, 19
8	8	1886	Marcus Kellum	James McKinney	54, 24
8	8	1902	James McKinney	William Butler	54, 25
8	8	1911	William Butler	Alonzo Leonard	54, 26
8	8	1919	William Butler	John Siegle	54, 33
8	8	1924	William Butler	John Siegle	54, 34
8	8	1927	Irene Butler Brown	John Siegle	54, 36
8	8	1928	John Siegle	William Butler	54, 37
8	8	1930	Emma Siegle	Virgil Burdick	54, 40

Sarah Hull sold Block 8, Lot 8 in 1853. The only Hulls listed in the census records for Hadley Township were members of the household of David and Lydia Hull, who appeared in the 1860 roll. None of these was named Sarah. David Green appeared on the 1850 census, however, and so appeared to have been in the area prior to purchasing the lot. He and his wife Jerusia were in their 60s then. Their household included two adults who shared their surname, and two very young girls (5 and 8 months). Presumably Joseph, was their son and Lovinia was his wife. All members of the household were listed as "white." The adults were born in New York, the girls in Illinois. Both David and Joseph were farmers. Ten years later, David and Gerusha appeared as members of a household headed by Joseph that includes Lovinia as well as the older of the two girls, a boy born since the last census. Also new to the household were two employees in their 20s: a male laborer and a female housekeeper, immigrants from Ireland.

None of these Greens were left in the township by the time of the 1870 census. In 1871 a deed lists James Vokes as the seller of Block 8, Lot 8. He did not appear in the census, either, but the purchaser, Solomon McWorter, did. He purchased the lot five more times over the course of the 1870s. Several of those purchases were from other McWorters. Sarah McWorter's transactions are described above. Lucy McWorter, the mother of both Sarah and Solomon -- and wife of Frank McWorter -- probably lived elsewhere at that time. The same was probably true

for Solomon. It is possible that the "Lucy" from whom Solomon purchased the parcel was a different family member, named for the matriarch. In 1850 there was a Lucy A., aged 23, born in Kentucky and living in Frank and the elder Lucy's household. There was also a Lucy J., aged 5, and a Lucy, aged 5 months, both born in Illinois and both in the household of Squire McWorter. The elder girl was his daughter and the younger was Frank McWorter, Jr.'s daughter. All of these Lucys would have been of age in 1872, the year Solomon purchased part of Lot 8 from one "Lucy McWorter." All of the McWorters are listed as "mulatto" in the pertinent census years. Solomon was described as a farmer, and he had a hand in land transactions on many of the blocks in New Philadelphia.

Lucy Vond, another person from whom a portion of Block 8, Lot 8 was purchased, was Solomon's sister. She was born in Kentucky and in 1870 was 44 years old. Lucy's husband Ansel is listed as "black" in the 1860 census. The other members of the Vond family are listed as "mulatto" in 1860 and 1880, and all are labeled "white" on the 1870 census. The family included three daughters and two sons, all under 12, with the older ones listed as being in school. Throughout the census records, Lucy Vond is described as someone keeping house.

No Judith Armstead appeared in the census records, nor does anyone else with that surname. Several John Johnsons appear over the years, but the only one in Hadley Township in 1870 was John Johnson, 32, born in Illinois, married to Anna, 27. He was a farmer and she kept house. They are both described as "white."

William Bower purchased Block 8, Lot 8 from Solomon McWorter in 1879. In 1850 James W. Bower, born in Ohio, was a teenager in the household of Anson Gray. There are no Bowers in the 1860 census. In the 1870 census his household included "Will," wife "Rebeca," two daughters and a son. Rebeca was born in Indiana, the older girl in Missouri and the two younger children in Illinois. The same members appeared in the 1880 census, at which time the elder Bowers were in their early 40s, their oldest child was 20, and the youngest 11. All were listed as "white." William was described as a farmer, and Rebecka as keeping house. William's age and birthplace confirm that William and "James," who sold the lot to Frederick Shipman, are the same man.

Frederick Shipman first appeared in the 1870 census in the household of his father. He was described as a farmhand of 21, born in Illinois. In 1880, he was the head of his own household, married to Lucy, 26, with three children five and under. He was described as a farmer, and Lucy kept house. She and their three children were also native Illinoisans, and all of them were described as "white."

By 1886, the next time Lot 8 was sold, the owner was Marcus Kellum. Note that several other Kellums were involved in the ownership of Lots 1 and 2 on Block 8. Marcus was the oldest son of John and Elizabeth Kellum. He was born in Ohio, and in 1870 he was 33. In that year, his household included his wife Sarah, 23, and a toddler son, as well as his brother and mother. In 1880, closer to the time of purchasing Lot 8, the family consisted of Marcus and Sarah, three children under the age of six, and a 30 year old boarder. All were listed as "white" in the census.

James McKinney was the next owner of Lot 8. The only McKinneys or McKinnys that appear in the census are members of the household of Charles F. McKinney. William Butler purchased the lot from McKinney in 1902. A William Butler appeared in the 1880 census as a farm laborer of 27. He and his wife Katie, 22, were born in Missouri. Their infant daughter was born in Illinois. He was listed as "black" on the census, and she and the child were listed as "mulatto." Katie was keeping house. William was involved in several more transactions with Lot 8 (1911-1924), each time as a seller. The last two transactions were with John Siegle, who also purchased a portion of Lot 8 from Irene Butler Brown in 1927.

Block 8, Lots 1-2 Archaeology

Archaeological work on Lots 1 and 2 of Block 8 had previously focused on a residential structure with a large cellar feature located on the northern edge of Lot 2. An electric resistivity survey undertaken in 2005 by Michael Hargrave had shown a strong indication of cultural remains, labeled as anomaly A43 in Figure 5.2. Soil conditions in those years were relatively dry, and such strong geophysical contrasts did not appear in the area of the southern portions of Lots 1 and 2 in that survey (Fig. 5.2). Anomaly A43 was excavated in the 2006 field season and proved to be the remains of a residential site. The history and archaeological investigations of

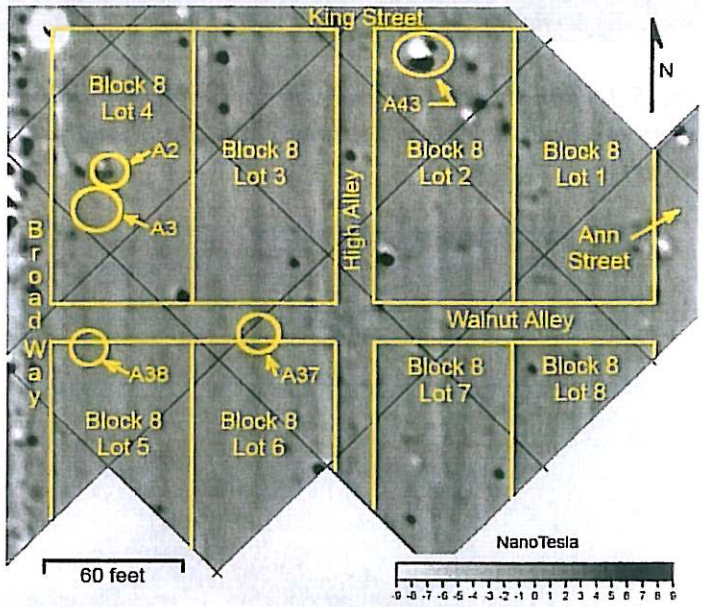

Figure 5.2. Resistivity Survey of Block 8, Lots 1 and 2 in 2005 and 2006 (Image by Michael Hargrave; overlay by Christopher Fennell).

that residence are discussed in detail in our 2006 report. Christopher Luce, a Baptist preacher, originally owned the property. The cellar feature measured about 18.6 ft. by 16 ft., and had underlain a house with plaster walls, dating from the 1850s. The house was dismantled and the cellar filled beginning with Sarah McWorter's ownership of the property in the 1860s, and final filling with a collapsed stone foundation and chimney remains occurred in the early 1870s (Shackel et al. 2006, chaps. 3E, 4).

The Time Team America archaeological investigations were conducted over the course of three working days in June 2008, during which the process and results were filmed for inclusion in an episode of their television program (Figs. 5.3, 5.4). Archaeologists for Time Team America, including Eric Deetz, Rochelle Lurie, Catherine Bird, and Julie Schablitsky, among others, and they undertook their research according to standard excavation and recording procedures utilized by the New Philadelphia Archaeology Project.

Figure 5.3. Time Team America archaeologists and film crew working on Block 8, Lots 1-2, June, 2008 (Photograph by Joe Conover).

Figure 5.4. Time Team America's helicopter crew obtained aerial views of the town site and surrounding landscape (Photograph by Joe Conover).

Geophysical prospection played a large role in selection of excavation areas. Archaeologists knew that the southwest corner of Block 8, Lot 1 was an important target area, but units were also placed nearby in order to follow-up on information obtained via geophysical

surveytechniques. Margaret Watters Wilkes (University of Birmingham) and Bryan Haley (University of Mississippi) conducted the geophysical surveys for Time Team, in consultation with Michael Hargrave.

Ground penetrating radar (GPR) identified an anomaly at the southern edge of Block 8, Lot 1, and archaeologists identified a second anomaly in the southern section of Block 8, Lot 1, using an electric resistivity survey. In turn, a magnetic gradiometry survey suggested the location of a potential anomaly in the area platted as Ann Street, just to the east of Block 8, Lot 1. On Block 8, Lot 2, geophysics experts identified another anomaly using part of the data obtained through the Thermal Infra Red (TIR) photography survey discussed in Chapter 2 of this

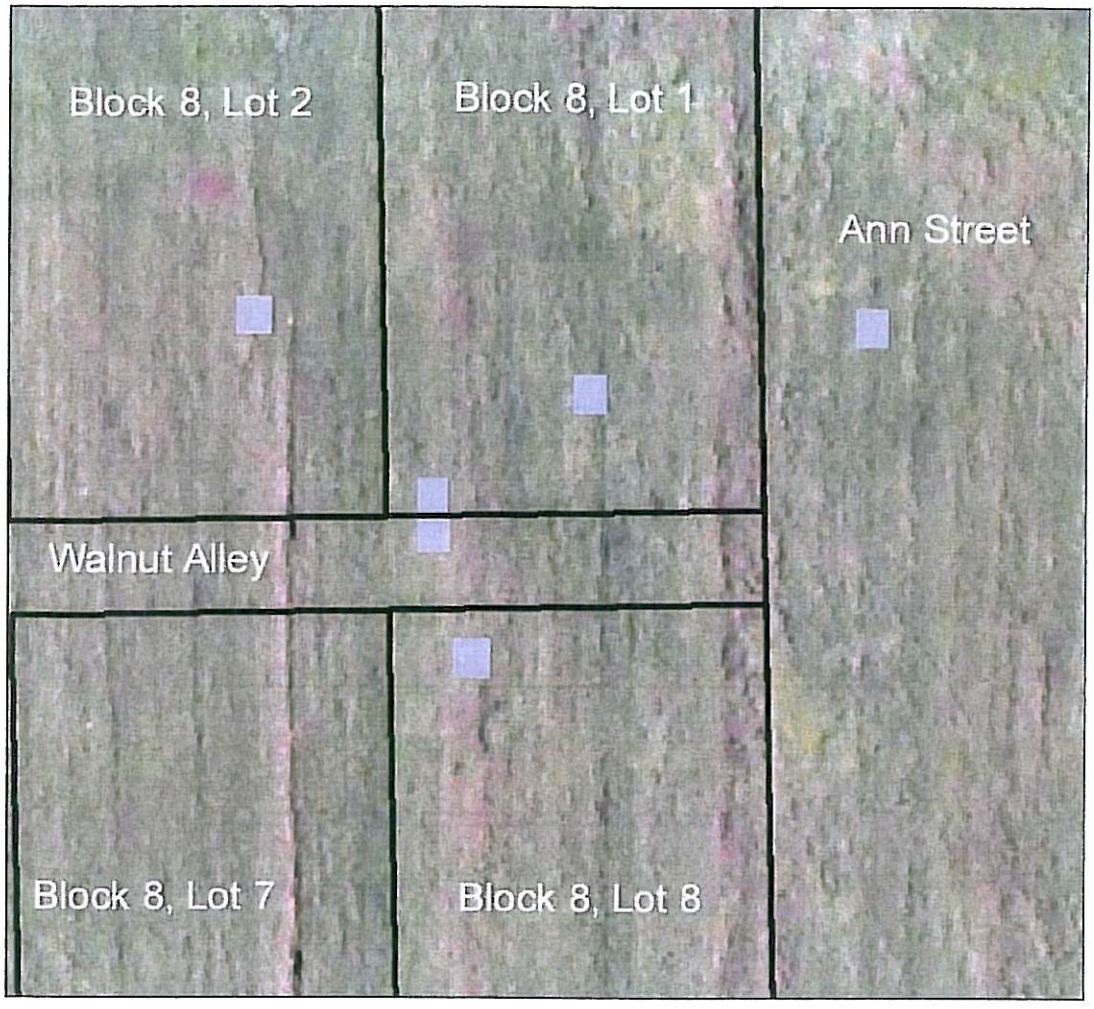

Figure 5.5. TIR image map of part of Block 8, with locations of excavation units indicated (Image by Margaret Watters Wilkes; label overlay by Christopher Fennell).

report. Figure 5.5 provides one version of such geophysical survey data maps, depicting the results obtained in the TIR survey in this area, and also indicates the locations of excavation

units placed by Time Team to investigate anomalies observed in the data results of the TIR, GPR, electric resistivity, and magnetic gradiometry surveys.

Ground penetrating radar identified an anomaly at the southern edge of Block 8, Lot 1, which archaeologists tested with two adjacent 5 ft. x 5 ft. units, one within the lot, and the second to the south, in Walnut Alley (Fig. 5.6). The plow zone was removed in two arbitrary levels of 0.5 ft. until subsoil was reached. Flat glass, brick fragments, and cut nails suggested a structure from the appropriate time period, but archaeologists did not uncover any structural features below the plow zone. Underneath level A2, which extended to 1.0 ft. below the ground surface, archaeologists identified several plow scars running north-south through the two units.

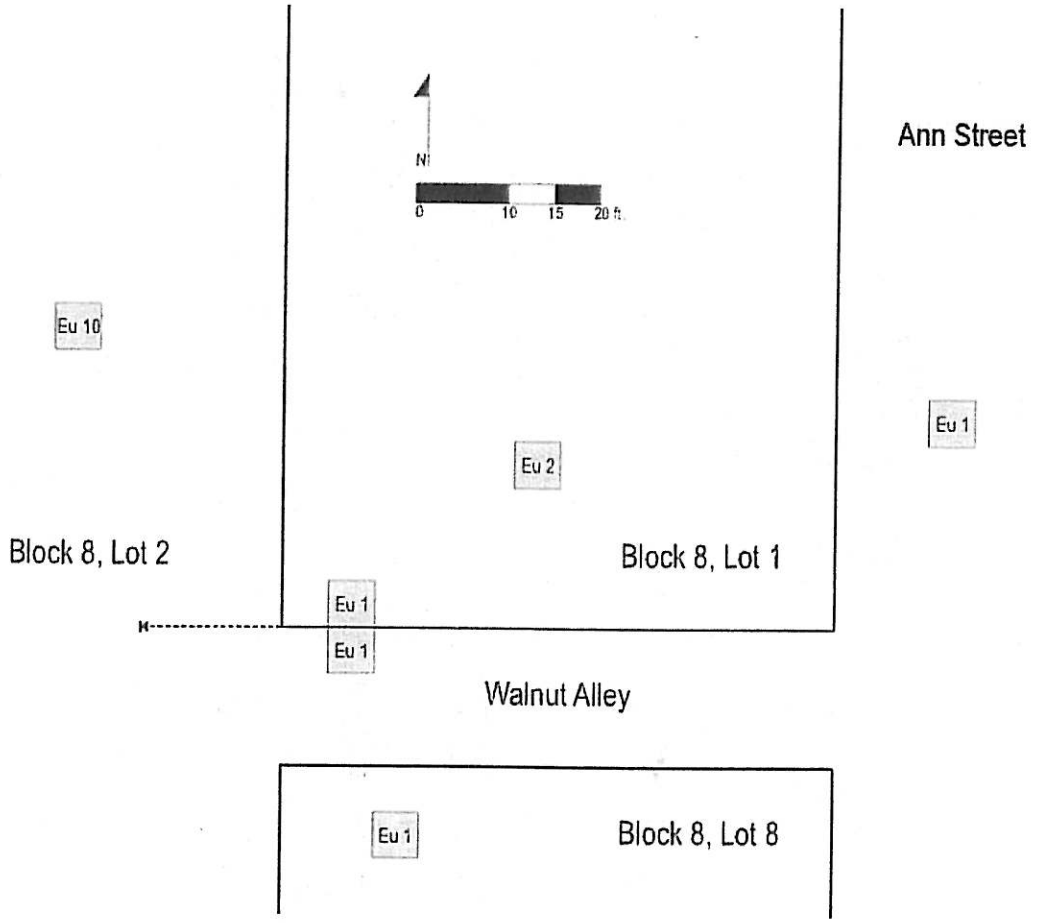

Figure 5.6. Map of excavation units placed by Time Team in the area of Lots 1 and 2 on Block 8 and surrounding vicinity. Following protocols used by the New Philadelphia Archaeology Project, Time Team labeled these units in consecutive order within each Lot or within the space of a platted alley or street. Thus "EU 1" in Walnut Alley was the first unit placed within the space of that alley, and the contiguous "EU 1" in Block 8, Lot 1, was the first unit placed within the space of that adjacent Lot (Image by Anna Agbe-Davies and Christopher Fennell).

Archaeologists identified a second anomaly in the southern section of Block 8, Lot 1, using a resistivity survey. No artifacts came from the first 0.5 ft. arbitrary level of the 5 ft. x 5 ft. excavation unit placed in that location (EU 2 in Block 8, Lot 1 in Fig. 5.6). Level A2 in this unit included unidentified nail fragments and brick fragments in the silty loam matrix, in addition to lamp chimney and flat glass. There was no feature present to account for the resistivity anomaly.

Magnetic gradiometry suggested the location of a 5 ft. x 5 ft. excavation unit in the space platted as Ann Street, just to the east of Block 8, Lot 1 (Fig. 5.6). The plow zone was removed in two arbitrary levels of 0.5 ft. each, and a third level that terminated on the top of subsoil, identified by the appearance of several features in the yellowish brown silty clay, two of which archaeologists labeled as Features 35 and 36 (Fig. 5.7).

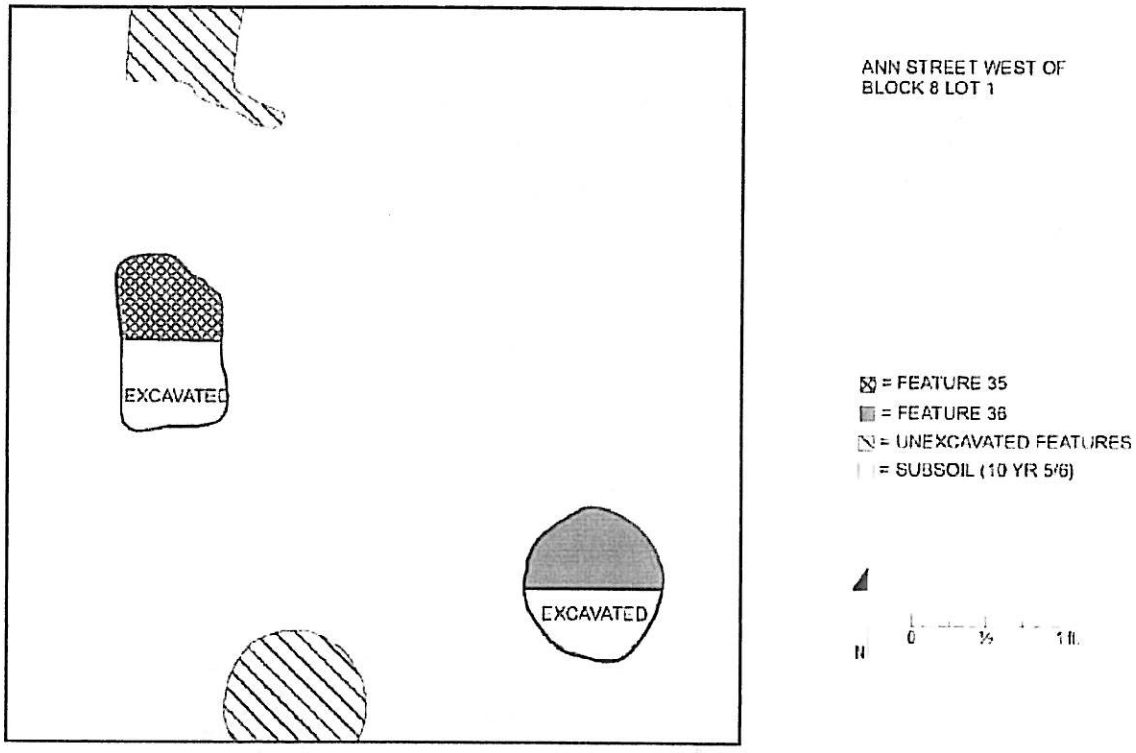

Figure 5.7. Plan view of Features 35 (on left) and 36 (on right) (Image by Anna Agbe-Davies).

Feature 35. Feature 35 appeared initially to be a small post hole or post mold, 0.7 ft. x 1.2 ft. in size (Fig. 5.7). However, once archaeologists bisected it, the deposit was revealed to be less than 0.1 ft. deep. Excavators did not remove any artifacts from the feature fill, and their final interpretation was that Feature 35 was a segment of a plow scar that had been distorted through animal burrowing or other non-cultural activity. A second similar feature (shown on the upper edge of Figure 5.7) did not receive an identifying number, nor was it excavated.

Feature 36. Excavators described Feature 36 as near perfectly round, and exactly 1.0 ft. in diameter in plan view (Fig. 5.7). When bisected, they revealed that the feature had very straight sides and extended 1.0 ft. into the surrounding subsoil (Figs. 5.8, 5.9). No artifacts or inclusions were removed from the feature fill. The most reasonable interpretation of this feature identifies it as a post hole dug in the late 1900s with a mechanical post hole digger. A second, similar feature (shown on the lower edge of Figure 5.7) was not given an identification number or excavated, given its probable similarity with Feature 36.

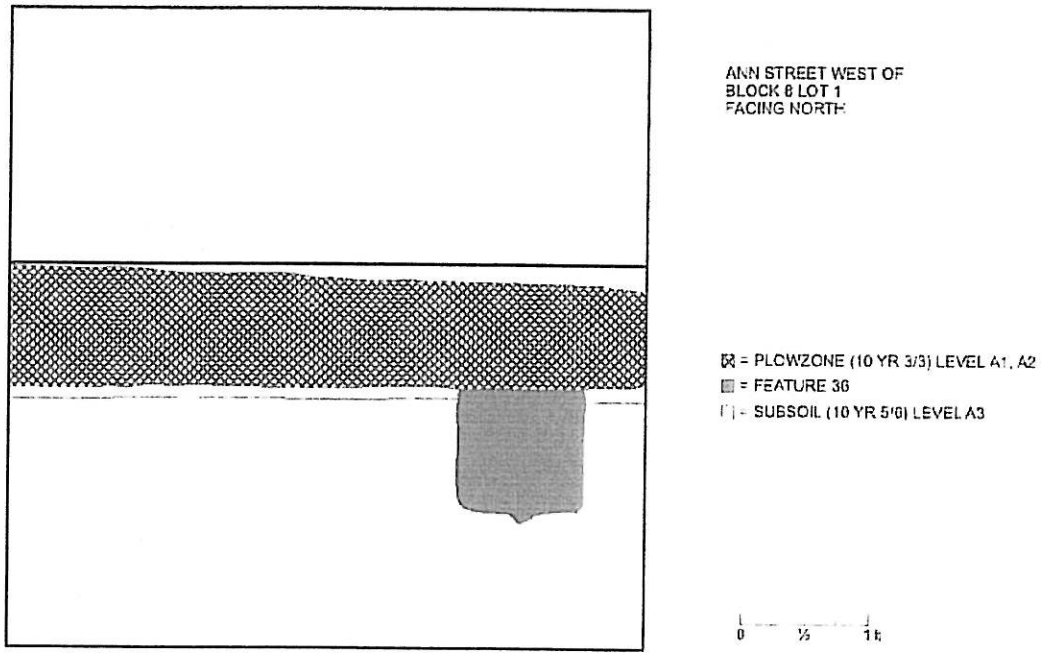

Figure 5.8. Profile view of Feature 36 (Image by Anna Agbe-Davies).

Figure 5.9. Feature 36 bisected in Excavation Unit 1 in the area of Ann Street east of Block 8, Lot 1 (Photograph by J. Eric Deetz).

On Block 8, Lot 2, geophysics experts identified an anomaly using Thermal Infra Red photography. Such an anomaly might indicate a large feature like a foundation that is composed of material different enough from the surrounding sediment that it warms or cools at a different rate than the matrix by which it is surrounded. Excavation Unit 10 was a 5 ft. x 5 ft. unit sited to test that anomaly (Figs. 5.5, 5.6). Archaeologists removed the plow zone in arbitrary levels of 0.5 ft. The first level (A1) included some architectural fragments. However, there were no artifacts or inclusions in the second level, and upon their removal, no features appeared in the subsoil beneath.

The final unit excavated by the Time Team America archaeologists was located in the northern portion of Block 8, Lot 8 (Figs. 5.5, 5.6). The decision to place a unit there was based on the magnetic gradient survey which identified an anomaly in that area. Excavation Unit 1 was a 5 ft. x 5 ft. square from which excavators removed the plow zone in two arbitrary levels of 0.5 ft. each. Level A1 included some whiteware and yellowware fragments as well as some architectural fragments. However, no finds came from the lower layer, and when it was removed, no features appeared in the subsoil beneath.

This collaborative effort by Time Team America allowed the New Philadelphia Archaeology Project to obtain highly valuable data from a new portion of the town site, and to pursue evidentiary leads suggesting the location of a school house for the town's African-American children. Given the brevity of Time Team's research time, which was made more challenging by unusually rainy weather in June, 2008, we obtained very useful data about the landscape on the eastern half of Block 8 that will help guide further investigations. Likewise, the geophysical data collected will be very useful in planning for additional research. In future field seasons, our archaeologists will continue this search for the remains of the African-American school house. This is a highly challenging undertaking, because the foundation supports for such a structure were likely very limited in size and spatial spread, and there was likely no cellar feature to accompany that building. In addition to our team of collaborating researchers, members of the descendant and local communities are very grateful for the efforts of Time Team to contribute to this search for an important element of African-American history in the Midwest.

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Chapter 6
King Street, North of Block 8

(Last updated: Nov. 25, 2008)

The platted streets and alleys of New Philadelphia were first explored archaeologically in 2008. As designed, the town had five east-west and five north-south streets, as well as nine marked alleys that quartered the large blocks and halved the smaller ones on the western edge of town (Fig. 6.1). However, it is clear that not all of the streets and alleys persisted an equally long time. A 1926 topographic map of Illinois shows a view of the New Philadelphia town site which suggests that King Street as one of the major platted streets had been discontinued as a thoroughfare by that time (Fig. 6.2). Nevertheless, a 1939 high-altitude aerial photograph shows a secondary, gravel-lined roadway in the location of the former King Street (Fig. 6.3). We found in the 2008 field season that the repeated uses of this area of the town site as a road are reflected in the archaeological record.

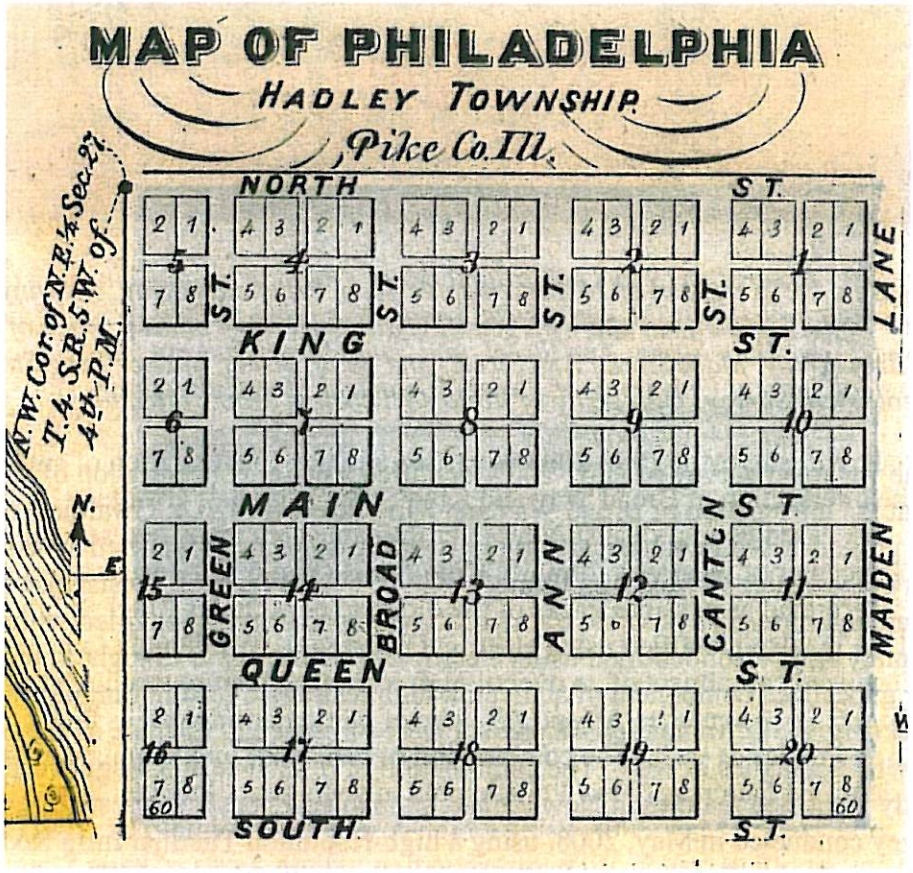

Figure 6.1. Excerpt from Atlas Map of Pike County, showing platted streets and alleys of New Philadelphia (Ensign 1872).

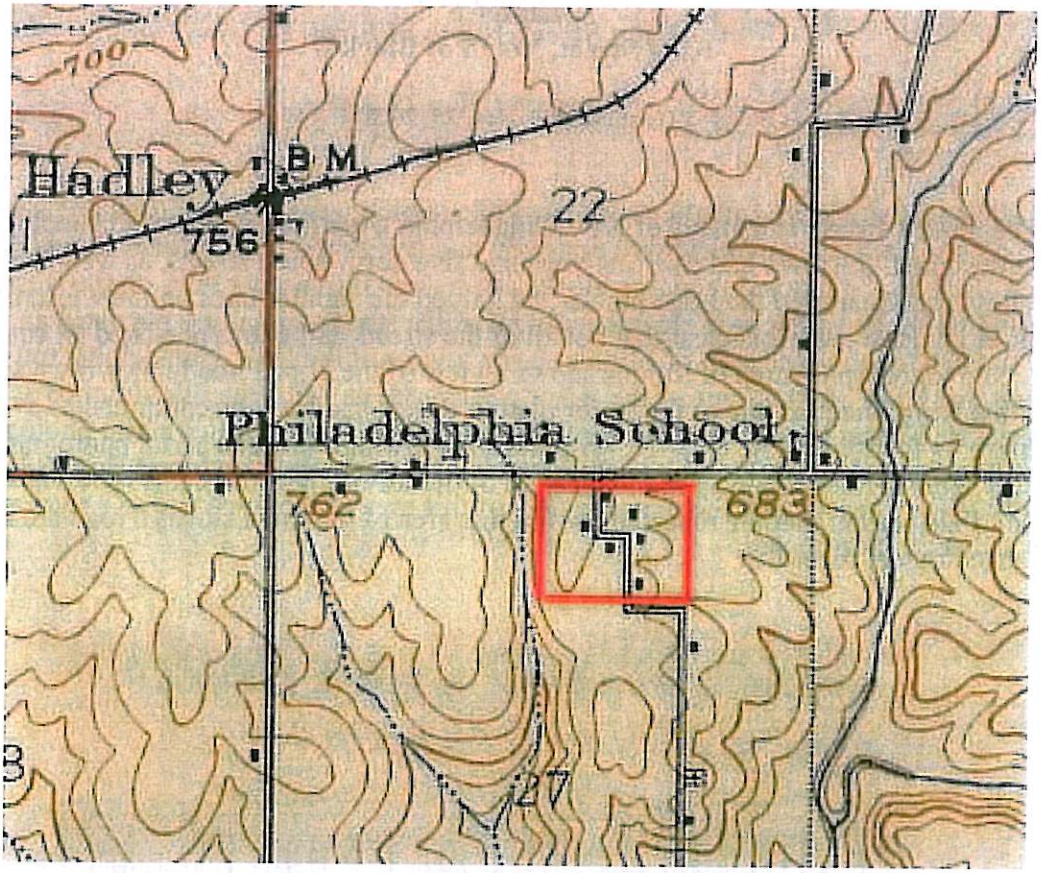

Figure 6.2. Excerpt of 1926 Topographic Map, Pittsfield region, showing area of New Philadelphia town site with gravel roads traversing platted space of portions of Broad Way, Main Street, Ann Street, and South Street, but not King Street (U.S. Geological Survey; University of Illinois Historical Map Collections).

The walkover survey of 2002-2003 identified a major concentration of surface finds with its center at the intersection of Broad Way and King Street (Fig. 6.4; Gwaltney 2004). In 2004 and 2005, ground-based geophysical surveys over the same area identified several interesting anomalies in the center of what was formerly King Street (Fig. 6.5). Resistance anomalies A8 and A9 were interpreted as possible tracks of the old road or potholes filled with gravel or looser soil. Anomaly A36, also identified using electrical resistivity, was thought to be either a discrete feature, or a localized component of an overall high resistance feature running east-west along King Street (Fig. 6.5). Anomalies A8 and A9 were of particular interest, as they corresponded with magnetic anomalies as well. The combination of resistance and magnetic anomalies has successfully identified features at New Philadelphia in years past. Interestingly, a low-altitude aerial survey conducted in May, 2008, using a high-resolution Thermal Infra Red (TIR) camera did not detect any significant anomalies corresponding with this area of King Street (see Chapter 2 of this report). This area was selected for testing through soil core sampling and excavation in 2008 to investigate the sources of these ground-based geophysical anomalies and potential reasons the absence of corresponding anomalies in the aerial TIR survey.

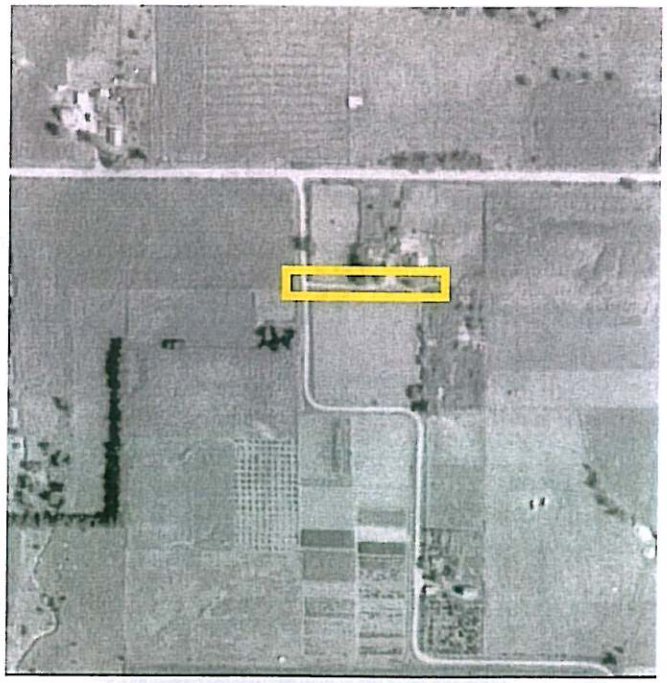

Figure 6.3. 1939 aerial photograph of New Philadelphia town site, showing gravel roads traversing platted space of portions of Broad Way, Main Street, Ann Street, South Street, and King Street (with the latter outlined by a rectangle) (Photograph from U.S.D.A. Aerial Photographs Collection; overlay by Christopher Fennell).

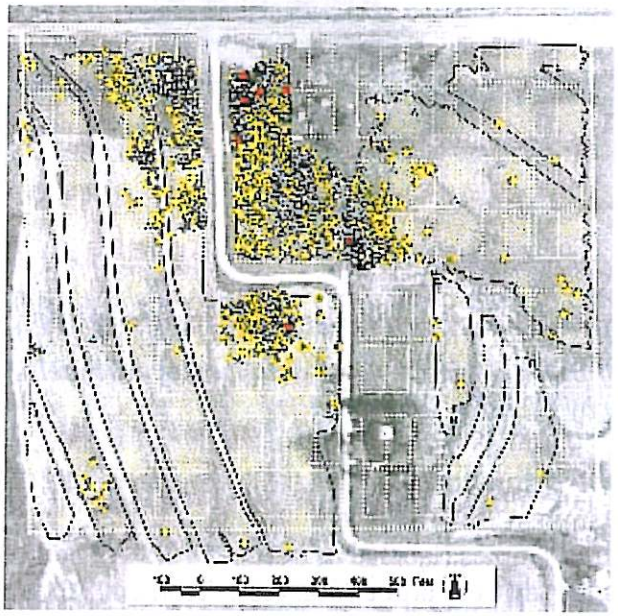

Figure 6.4. Distribution of historic-period domestic artifacts in 2002-2003 walk-over survey (Image by Thomas Gwaltney 2004)

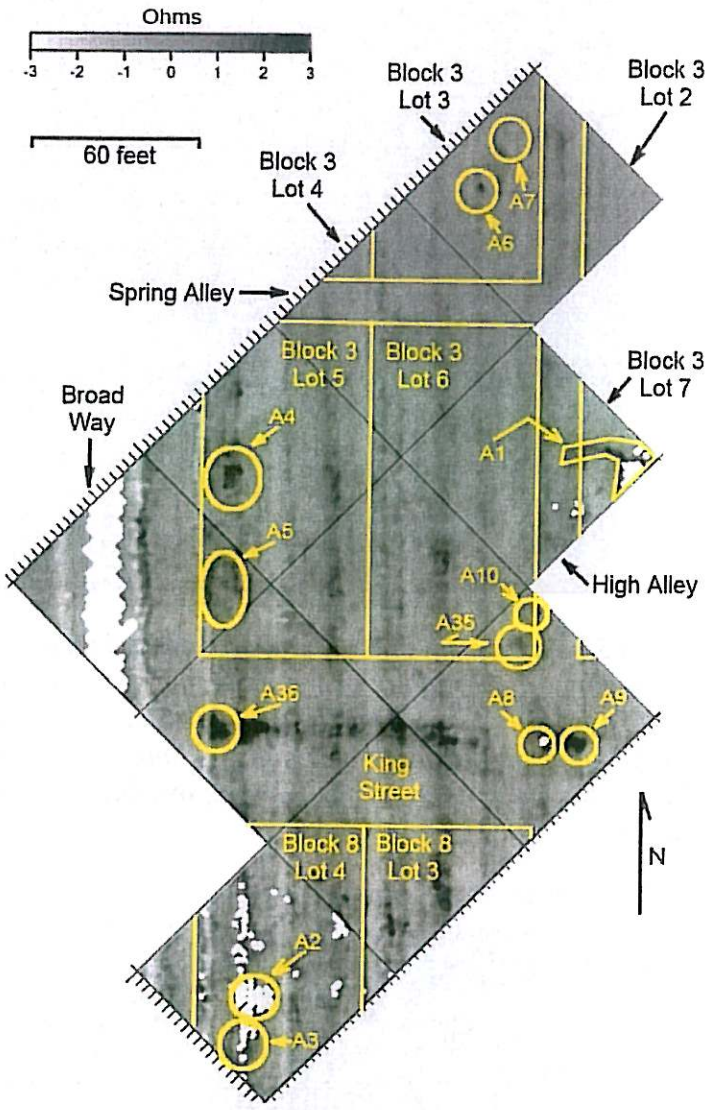

Figure 6.5. Electric resistivity survey map showing alignment of anomalies A8, A9, and A36 along platted space of King Street north of Block 8 (Geophysical data map by Michael Hargrave; overlay by Christopher Fennell).

A single transect of nine core samples (with the transect labeled as T2) was laid out through the area of anomaly A36. The location of anomalies A8 and A9 was covered with a single transect of 21 core samples (labeled as transect T6). All soil cores samples were obtained using a one-inch diameter soil core probe (Fig. 6.6). Transect T6 consisted of a single line of core samples 1 ft. apart running east from T6-1, which is located 30 ft. north of the northeast corner of Block 8, Lot 3. This transect picked up one foot east of the east end of transect T2. It was placed to ground-truth anomalies A8 and A9 (Figs. 6.5, 6.6). Below the sod, these core samples reveal 7.5YR 3/1 (dark gray) to 10YR 4/2-3/3 (dark grayish brown-dark brown) loam that reaches a depth of about 1.2 ft. below the surface in samples T6-1 through T6-4. Below that

the soil is a 10YR 5/4 silty clay. In the remaining samples, occlusions were encountered at 0.7-0.9 ft. below the ground surface. In many cases, fragments of jasper and chert were observed in the soil column or at the end of the probe. These fragments were interpreted as coming from a deliberately deposited gravel surface, and were consistent with the sample of pebbles collected from Feature 30 in Excavation Unit 1, discussed below. Minute artifact fragments (brick, charcoal, and rust flecks) were identified in samples T6-16 through T6-19 and T6-21. No further excavation was undertaken in this area of anomalies A8 and A9. Instead, archaeologists chose to sample the linear alignment of anomalies in the platted space of King Street with an excavation unit placed in the vicinity of anomaly A36.

Figure 6.6. Plastic pin flags mark the locations of soil core probe sample points along transect T6 over anomalies A8 and A9 in the platted space of King Street (Photograph by Doug Carr, Illinois State Museum).

Transect T2-1 through T2-9 ran east-west covering an extent of 110 feet. The series began 150 ft. north and 10 ft. east of the southwest corner of Block 8, Lot 4. The western end was placed to ground-truth anomaly A36. In the core samples, the transition from 7.5YR 2.5/2 clay and silt loams to more clayey 7.5YR 6/6-5/8 soils occurred at approximately 1.4 ft below the ground surface. Sample T2-2 reached 1.9 ft. below the surface at which depth sandier clay, also 7.5YR 6/6 was discovered. Exceptions to the norm were found in T2-3 and T2-9 in which rock or some other obstruction was encountered at 0.6 and 0.4 ft. below the surface. In the case of T2-6, sediments of 7.5YR 3/2 with pebble inclusions were encountered at a depth of 1.7 ft, deeper than any of the other probes. The above summary suggested possible features, likely part of a buried roadbed, at core sample points T2-3, T2-6 and T2-9.

Excavation Unit 1 in the space of King Street was placed with its northeast corner 10 ft. north of T2-1 (Figs. 6.7, 6.8). Its purpose was to further explore the phenomenon indicated by anomaly A36 and probed using soil core samples along transect T2. It is the only unit excavated

in King Street during the 2008 season. Within this Unit 1, excavators uncovered Features 30, 32 and 32b (Fig. 6.9). All of these features extend further than the perimeter of the unit, and were interpreted as remnants of historic roads and therefore the archaeologists decided not to expand the excavation area further in an attempt to delineate their total extent. The plow zone was removed in two arbitrary levels of 0.5 ft. (A1) and 0.3 ft. (A2), level A2 being truncated by the appearance of a soil color change at the top of Level B1/Feature 30.

Feature 30. Feature 30 covered the 5 ft. x 5 ft. extent of Excavation Unit 1. It consisted of a 0.51 ft. thick layer of 7.5 YR 4/4 and 4/3 (brown) silty loam with extensive gravel and pebble inclusions (Fig. 6.9). The stones were slightly less prevalent in the southeast corner of the unit.

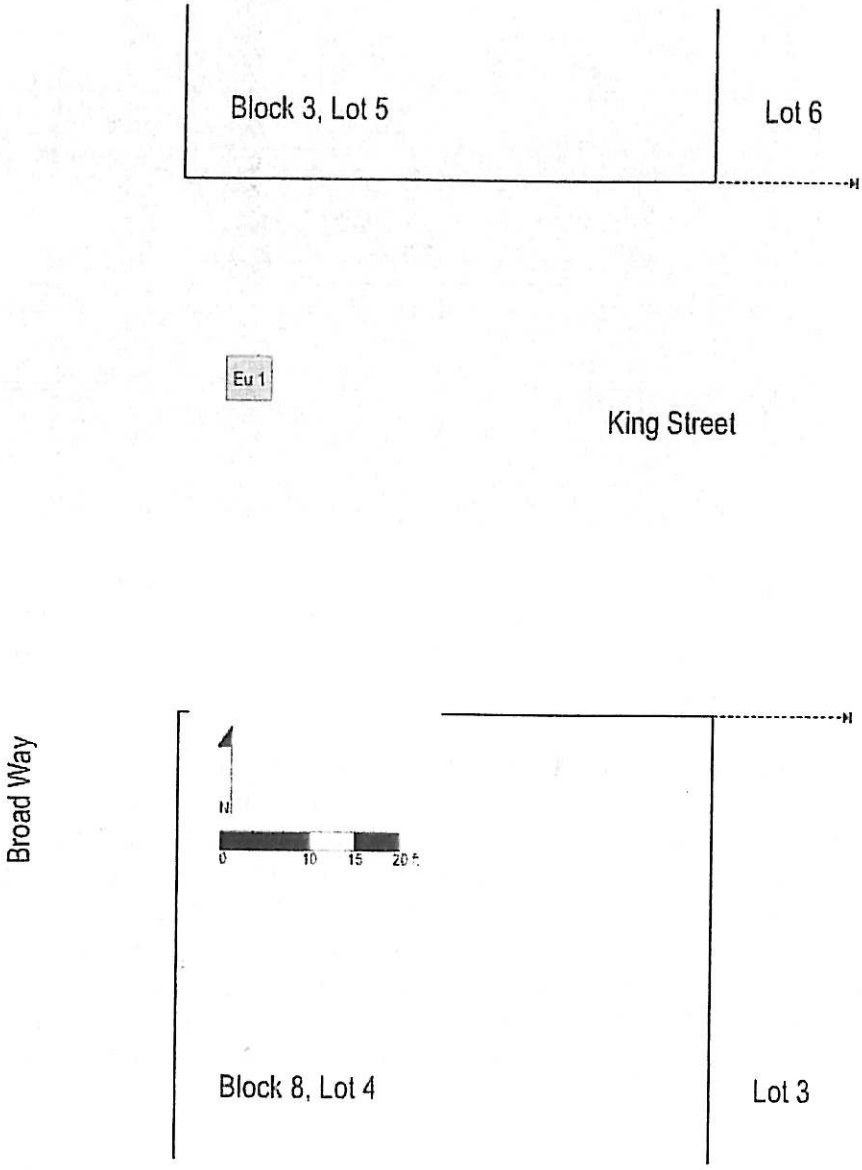

Figure 6.7. Map of platted space of King Street near intersection with Broad Way and location of Excavation Unit 1 in King Street (Image by Anna Agbe-Davies).

A representative sample of these pebbles and gravel fragments was collected from level B1, Feature 30. Dr. Christopher Wigda, Assistant Curator of Geology at the Illinois State Museum, examined this sample and identified the elements as including:

-- naturally occurring pebbles of chert and jasper that were well-rounded and worn by movement in waterways, such as a river or stream, with sample specimens measuring approximately 0.125 x 0.104 x 0.104 ft., 0.073 x 0.040 x 0.073 ft., and 0.125 x 0.089 x 0.104 ft.;

-- naturally occurring fragments of sandstone, with a sample specimen measuring approximately 0.188 x 0.146 x 0.073 ft.;

-- chert fragments with angular and irregular fractured surfaces likely caused by the material having been quarried or fragmented by cultural activity, with sample specimens measuring approximately 0.156 x 0.083 x 0.063 ft. and 0.146 x 0.104 x 0.052 ft.; and

-- limestone fragments, also with angular and irregular fractured surfaces likely caused by the material having been quarried or fragmented by cultural activity, with sample specimens measuring approximately 0.170 x. 0.140 x 0.073 ft. (Wigda pers. communication 2008).

Other artifacts recovered from Feature 30 included ceramic, glass, iron, and plastic fragments dating from the late 1800s through the early 1900s.

Figure 6.8. Anna Agbe-Davies excavates Unit 1 in the space of King Street (Photograph by Doug Carr, Illinois State Museum).

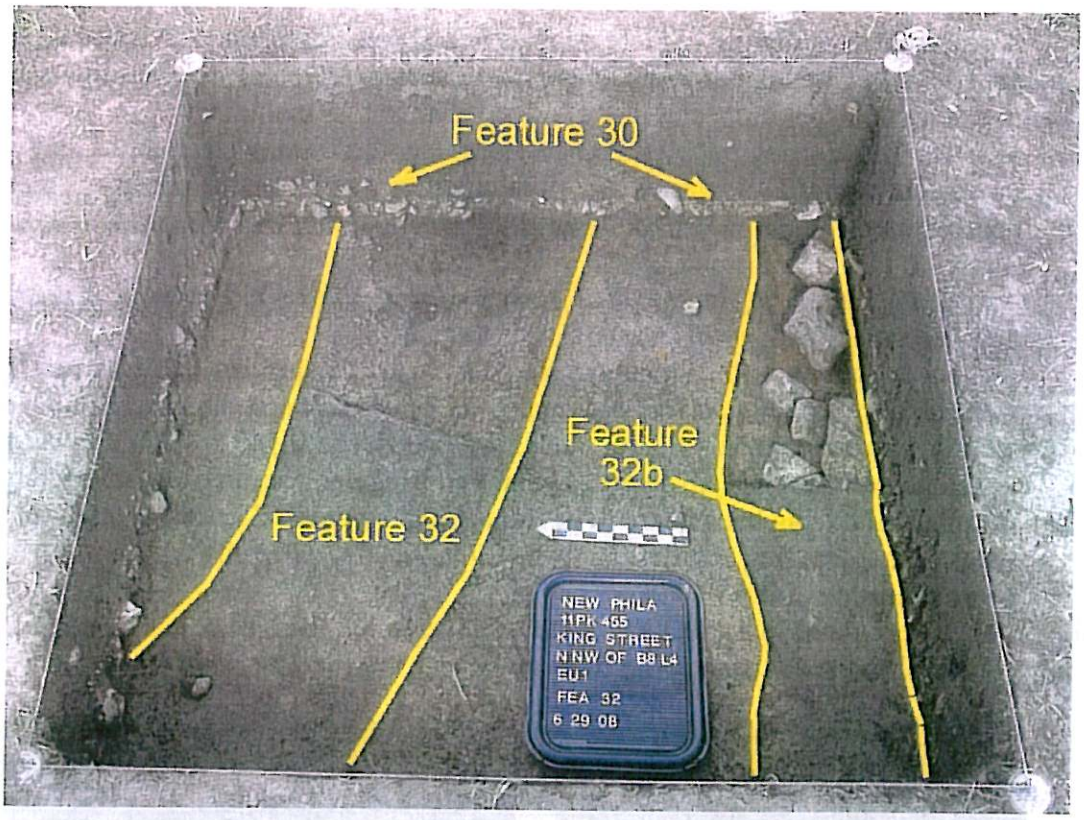

Figure 6.9. Excavation Unit 1 in King Street, with profile and plan views of features outlined (Photograph by Anna Agbe-Davies; overlay by Christopher Fennell).

We have tentatively identified Feature 30 as a sample of the historic roadway that was still visible in the 1939 aerial photograph, which extended from Broad Way along King Street to the corner with Ann Street, where it terminated at a cluster of twentieth-century buildings, a distance of approximately 255 ft. (Fig. 6.3). We interpret this linear, buried lens of gravel and small pebbles as the source of anomalies A36, A8, and A9.

This lens of buried gravel and pebbles appears to lie approximately 1.2 ft. below the ground surface and further extends approximately 0.50 ft. in depth throughout the extent of this linear series of anomalies running along this extent of the platted space of King street. This configuration was detected quite clearly in ground-based, electric resistivity surveys of the area (Fig. 6.5). Yet, this fairly concentrated lens of buried gravel and pebbles was not detected by a low-altitude aerial survey conducted in May, 2008, that utilized high resolution Thermal Infra Red (TIR) imaging (see Chapter 2 of this report). It appears that such low-altitude TIR surveys can serve well to detect concentrated foundation remains, but cannot detect a more subtle feature like this buried roadbed lens of gravel and pebbles.

Under Feature 30, excavators encountered a thin (0.1 ft.) layer of 7.5YR 4/4 and 4/3 (brown) silty clay loam. Level B2 is distinguished from the overlying Feature 30 primarily by the lack of pebble and gravel inclusions. Immediately under B2, archaeologists discovered two additional features, initially identified as possible plow scars or wheel ruts (Fig. 6.9). The visible

portions of both Feature 32 and 32b were cross-sectioned in order to see the basin in profile and obtain information about their formation, while leaving a portion of each still intact (Fig. 6.9).

Feature 32. Feature 32 is 2.4 ft. at its maximum extent (N-S) and spans the full 5 ft. (E-W) extent of the excavation unit. It is not possible to determine the feature's fullest extent without excavation of additional units. Feature 32 is a 10YR 3/2 (very dark grayish brown) sandy loam interleaved in extremely thin lenses with 7.5YR 5/6 (strong brown) clay. The entire feature contains flecks of mortar, brick and charcoal. The strong brown clay closely resembles the subsoil into which the feature cuts. One possible interpretation is that the lenses within Feature 32 were formed by multiple episodes of water erosion and soil weathering.

Upon excavating Feature 32, archaeologists uncovered a rounded V-shaped basin (Fig. 6.9). The depth is 0 .37 ft. at the eastern edge of the excavation unit, but only 0.28 ft. at the section line. Its width at the section line is 1.6 ft, flaring and curving slightly to the west (the area which was left intact).

Feature 32 is interpreted as a possible wheel rut subsequently filled in by eroding sediments, or deliberately filled in by human agency. The feature extends from the northwest corner of the unit east-southeasterly a distance of 5.2 ft. This shape corresponds nicely with the arc of a wheel turning north from historic King Street onto Broad Way. Artifacts in Feature 32 included a few fragments of refined, late nineteenth-century ceramics and a flattened fragment of lead, along with nails and nail fragments, dating to the mid- and late-1800s. Features 32 and 32b very likely represent the remains of a roadbed along the space of King Street that predated the gravel-lined roadbed of which the overlying Feature 30 was a sample.

Feature 32b. Feature 32b is less clearly exposed by the excavation of Unit 1. It extends east-west across the southern edge of the unit (Fig. 6.9). The maximum visible dimensions are 5 ft. (E-W) x 1.3 ft (N-S). Feature 32b appears to be an east-west linear feature not unlike Feature 32, but after additional cleaning may have developed a curve to the south in the southwest corner of the unit, indicating that excavators had uncovered the northern sliver of a circular feature extending further to the south. The fill in Feature 32b is composed of 7.5 YR 3/1 (very dark gray) sandy clay loam with charcoal and brick flecks. A number of large cobbles are included in the fill (0.5-0.7 ft.). Some of these stones are visible from the surface of the feature, and most extend to the bottom of its basin.

After being bisected, the feature appeared to have a shallow u-shaped basin (Fig. 6.9). The maximum depth is 0.4 ft at the section line and approximately 0.2 ft. (obscured by a cobble) at the eastern edge of the unit. Given Feature 32b's proximity to Feature 32, and the strikingly different artifact content, it could be a wheel rut filled in at a different time (perhaps at an earlier time, when blacksmithing debris was still available for road maintenance). Additional cleaning also revealed a possible revision of the feature's shape, curving inward to the south wall of the unit. Artifacts consisted almost entirely of slag, a sample of which the archaeologists retained.

Based on the success of this application of multiple survey methods, we hope to employ similar techniques to explore the extent of the constructed road and alley infrastructure of the town site in future field seasons. Town plats like the one created by Frank McWorter in 1836

often depict an idealized vision of a specific community landscape that often results in only partial realization of the planned network of planned streets, alleys, and developed lots.

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Chapter 7
Core Sampling of Terraces West of Broad Way

(Last updated: Nov. 25, 2008)

In prior field seasons, archaeologists investigating the New Philadelphia town site primarily utilized one-inch diameter soil core sampling tools for an initial systematic testing of anomalies identified through geophysical surveys. Those smaller-scale core sampling tools typically obtain core samples of three feet in depth below the ground surface. Starting in the 2008 field season, we also began utilizing a two-inch diameter soil core sampler that can obtain core samples of up to six feet in depth below the ground surface. Figure 7.1 depicts this type of heavier-gauge soil core sampling device, which is driven into the ground with a thirty-pound slide hammer assembly on the upper portion of the device, and which is withdrawn from the ground with a custom lever jack assembly.

Figure 7.1. Example of a slide hammer driven, two-inch diameter core sampling device.

We will use this core sampling device, which is referred to as the "AMS core sampler," in future field seasons as part of our ongoing program of conducting systematic testing of anomalies identified through remote sensing methods employed at the town site. Such core sample surveys can be used to test the anomalies identified both in ongoing ground-based geophysical surveys, and the anomalies identified in the low-altitude thermal imaging survey conducted in May, 2008 (see Chapter 2 of this report).

During the 2008 archaeological field school at New Philadelphia, we utilized the AMS core sampler to test a series of earthen terraces on the west side of the New Philadelphia town site. These terraces were constructed in the early 1990s by private landowners of portions of the town site as part of a federal program that promoted the creation of such ridges as measures to control soil erosion on the landscape. One can readily observe the contours of these terraces by comparing a 1939 aerial photograph of the town site (Fig. 7.2) with one taken in 1998 (Fig. 7.3).

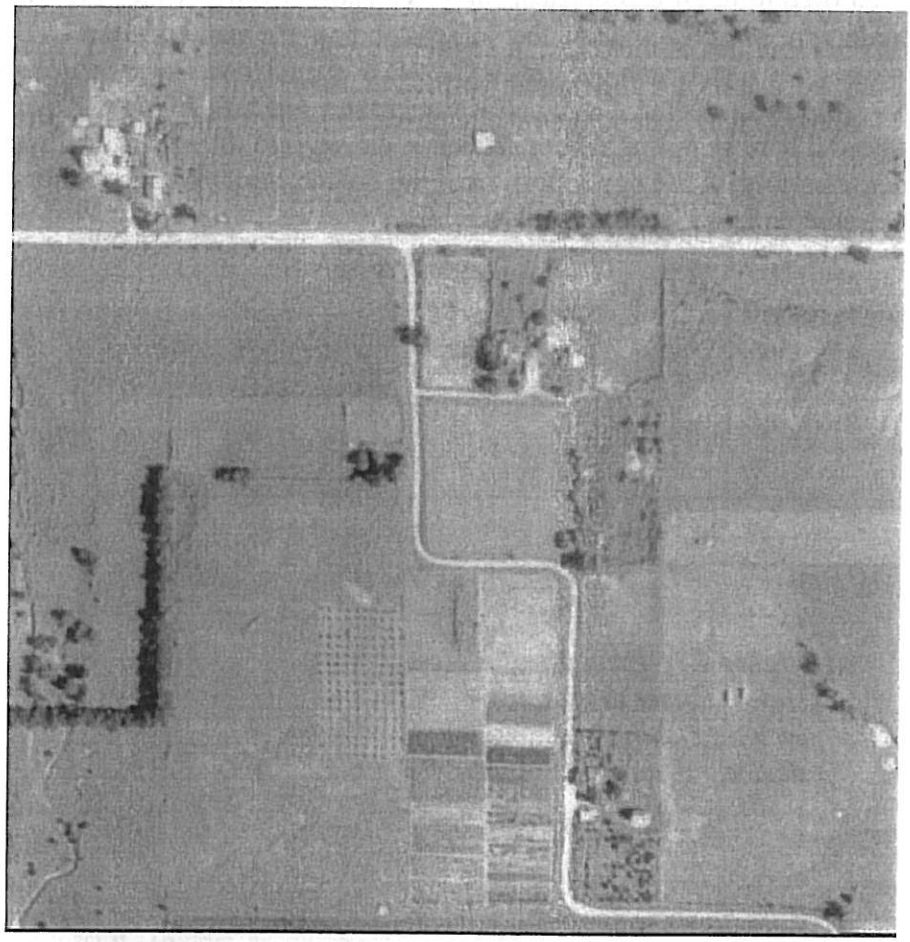

Figure 7.2. 1939 aerial photograph of New Philadelphia town site (Photograph from U.S.D.A. Aerial Photographs Collection).

The west side of the town site in the 1939 aerial photograph consisted of relatively even topography (Fig. 7.2). That part of the landscape was modified in the early 1990s to create a series of curving terraces and a new catchment pond, as shown in the 1998 photograph (Fig. 7.3). A systematic walk-over survey of the town site conducted in late 2002 and early 2003 recovered relatively few artifacts from the surface area of those terraces, in contrast to a high frequency of artifacts located on the surface of the north central part of the town site (Gwaltney 2004). We are still in the process of exploring the area of these terraces with ground-based geophysical surveys, and we have questioned whether this area of the town site was dramatically disturbed by the creation of those terraces.

Figure 7.3. A 1998 high-altitude aerial photograph of the New Philadelphia town site, with town boundaries outlined and three earthen terraces labeled (U.S. Geological Survey, Aerial Photographs Collection).

During the 2008 field school, we undertook AMS soil core sample surveys along the ridges of the terraces labeled as 1, 2, and 3 in Figure 7.3. One general scenario for the method in which such terraces are created involves a bulldozer digging into the ground surface on either side of a terrace ridge and pushing soil and sediment layers up into that ridge in a way the significantly disturbs both the surrounding depressions, called swales, and the resulting ridges. If such a method was employed, one expects a soil core sample in a swale to show the absence of a thick top soil layer (which would have been scraped away onto the neighboring ridge) and one expects to find a soil core sample of the ridge top that exhibits significant mixing and disturbance of soil layers that were carved out of swales and pushed up to create that higher contour point.

Figure 7.4. Paul Shackel and Chris Fennell obtain AMS soil core samples on terrace 1 in the New Philadelphia town site (Photograph by J. Eric Deetz).

We placed several soil core sample points at approximately every 100 ft. from the north edge of the town site running southerly down the extent of terraces 1 and 2 and on part of terrace 3. The AMS soil core sampling device obtained sample profiles that went four feet in depth and were two-inches in diameter. Core samples were later recorded in profile as to soil and sediment colors, textures, and types, and any inclusions of cultural materials. We also took adjacent samples from points in the swale immediately east of terrace 1 (Figs. 7.3, 7.4). These soil core samples indicate that the stratigraphy underlying terrace 1 remains undisturbed, whereas the stratigraphy on the ridges of terraces 2 and 3 appears to be significantly disturbed from the creation of the terraces. Similarly, the swale immediately east of terrace 1 appears to lack the typical upper stratum of top soil found on other parts of the town site. It appears that terrace 1 was created by digging out adjacent swales without bulldozing soils and sediments in a jumble onto the ridge-top.

Based on these results, we may target portions of terrace 1 for further archaeological investigation in future field seasons. We will also use the AMS core sampler to obtain core samples of four or six feet in depth to test other portions of the town site stratigraphy or particular anomaly locations identified in ground-based or aerial remote sensing surveys.

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Chapter 8
Concluding Observations and Recommendations

(Last updated: Nov. 25, 2008)

Our 2008 field season at the New Philadelphia town site was highly successful. Two new residential sites were uncovered and investigated extensively, new aerial and ground-based geophysical survey data were obtained for future exploration, targeted testing of the roadways of the town site proved very productive, core sample testing of terraces revealed surprisingly undisturbed stratigraphy for future excavation, and our search for the remains of an African-American school house within the town site was significantly expanded and will be continued in future field seasons. The educational component of our NSF-REU field school in 2008 was also a resounding success. At the time of writing this report, at least four of our field school participants are applying to graduate programs in African-American archaeology and history, including two individuals of African-American heritage and one of Latin-American heritage.

2008 New Philadelphia Archaeology Field School Participants.

Based on data obtained through survey, excavation, and archival research to date, our 2009 research and field work efforts will likely focus on the following locations and tasks:

a. Undertake targeted geophysical surveys and excavations in the area of Block 12, Lots 1-4, in which a shovel test pit survey in 2005 uncovered indications of occupation site remains; there also exists limited evidentiary leads indicating this block may have been a location for an African-American school house.

b. Continue core sampling and excavations of the site of Louisa McWorter's house on Block 13, Lots 3 and 4, on which geophysical surveys and partial excavations were undertaken in 2005.

c. Continue core sampling and excavations of the site of a blacksmith shop located in the area of Block 3, Lots 1 and 2, on which geophysical surveys and partial excavations were undertaken in 2006.

d. Undertake targeted geophysical surveys, and subsequent core sampling and excavations, in the area of Block 11, Lots 1-2, on the eastern edge of the town site; historian Claire Martin's research indicates these lots were owned in the mid-1850s by Josephus Turpin, an African American with a small household listed in the 1855 state census, and who served as a sergeant in the 29th Colored Infantry during the Civil War.

e. Use a hammer-driven soil core sampler to test thermal anomalies from the 2008 low-altitude aerial survey and to further explore the stratigraphic profiles of earthen terraces on the west side of the town site.

f. Undertake core sampling and excavations on selected locations on the northernmost portions of the ridge-top of terrace 1 in Figure 7.3 of this report; AMS core samples of that terrace ridge in 2008 revealed intact stratigraphic profiles; this terrace ridge runs immediately to the west of known occupation locations in Block 4.

g. Undertake geophysical and core sampling surveys in the area of Block 2, immediately to the east of the known occupation locations and blacksmith shop site in Block 3; commence excavations in this block where warranted by survey results.

In addition to the continuing success and productivity of the New Philadelphia archaeological field schools, this is an exciting time for the heritage of this remarkable community. In 2005, this project succeeded in placing the entire town site of New Philadelphia onto the National Register of Historic Places as a nationally significant archaeological resource. In October 2008, nomination of the town site to National Historic Landmark status was approved by the National Historic Landmarks committee in Washington, D.C. Patricia McWorter presented an eloquent and moving statement on behalf of the McWorter family at that hearing on the powerful legacies of New Philadelphia and Frank McWorter. This nomination received official support from U.S. Senators Barack Obama and Richard Durbin; U.S. Representatives Ray LaHood and John Shimkus; Illinois Senators Deanna Demuzio, Emil Jones, Jr., and John Sullivan; Illinois Representative Jil Tracy; and Governor Rod Blagojevich, among others. Upon final approval by the Secretary of the Interior later this autumn, the New Philadelphia town site will be formally designated as a National Historic Landmark. Members of the descendant and local communities, along with our collaborative team of researchers, are extremely grateful for the continuing support of the National Science Foundation's program of Research Experiences for Undergraduates, which has been instrumental in advancing these many paths of education, research, and progress.

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Chapter 9
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